



**U.S. Army Corps
of Engineers
New Orleans District**

**Cultural Resources Series
Report Number: COELMN/PD-89/01**

AD-A273 065

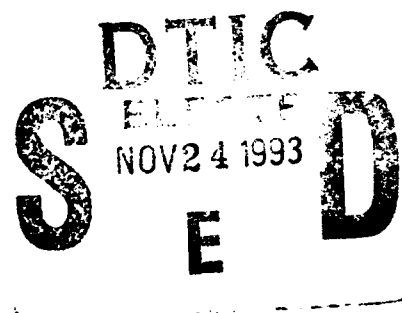


**CULTURAL RESOURCES SURVEY OF THREE
IBERVILLE PARISH LEVEE ENLARGEMENT AND
REVTMENT CONSTRUCTION ITEMS**

September 1993

FINAL REPORT

**R. Christopher Goodwin & Associates, Inc.
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New Orleans, LA 70123**



PREPARED FOR:

**U.S. Army Corps of Engineers
New Orleans District
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93-28738

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93 11 23 03 9

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
1a. REPORT SECURITY CLASSIFICATION			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT Unclassified. Distribution is unlimited.		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S) COELMN/PD-89-01		
6a. NAME OF PERFORMING ORGANIZATION R. Christopher Goodwin & Associates, Inc.		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION U.S. Army Corps of Engineers New Orleans District		
6c. ADDRESS (City, State, and ZIP Code) 5824 Plaque St. New Orleans, LA 70123			7b. ADDRESS (City, State, and ZIP Code) P.O. Box 60267 New Orleans, LA 70160-0267		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION U.S. Army Corps of Engineers New Orleans District		8b. OFFICE SYMBOL (If applicable) CELM-PD-RN	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DACW29-86-D-0093, Delivery Order 06		
8c. ADDRESS (City, State and ZIP Code) P.O. Box 60267 New Orleans, LA 70160-0267			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO. N/A	PROJECT NO. Civil Works Funding	TASK NO.
11. TITLE (Include Security Classification) CULTURAL RESOURCES SURVEY OF THREE IBERVILLE PARISH LEVEE ENLARGEMENT AND REVETMENT CONSTRUCTION ITEMS					
12. PERSONAL AUTHOR(S) R. Christopher Goodwin, Ph.d., Rebecca E. Bruce, Lawrence L. Hewitt, and E. Jeanne Harris					
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Year, Month, Day) 1993, September 22		15. PAGE COUNT 155
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Between March and July 1988, R. Christopher Goodwin & Associates, Inc. conducted a cultural resources investigation of three levee and revetment construction rights-of-way located between River Miles 204.0 and 191.0 along the left descending bank of the Mississippi River in Iberville Parish, Louisiana. This project was sponsored by the U.S. Army Corps of Engineers, New Orleans District. Within the 13 mi project area, approximately 4.6 mi of batture were surveyed. Four previously unrecorded historic sites (16IV152, 16IV153, 16IV154, and 16IV155) and one previously recorded site (16IV142) were tested. This report describes the historic development of the project area from the initial settlement through the twentieth century, and it presents the methods and results of archeological survey and site testing. Based upon the field investigations and laboratory analyses, no additional testing is recommended for all of the tested sites. None of these sites is eligible for nomination to the National Register of Historic Places.					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Howard R. Bush			22b. TELEPHONE (Include Area Code) (504) 862-2550		22c. OFFICE SYMBOL CELMN-PD-RN



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT CORPS OF ENGINEERS

P.O. BOX 60267

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30 September 1993

REPLY TO
ATTENTION OF:

Planning Division
Environmental Analysis Branch

To The Reader:

This cultural resource effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District, as part of our cultural resource management program. The report documents the results of a combined cultural resource survey and testing of a revetment and levee enlargement project in Iberville Parish, Louisiana.

We concur with the authors' recommendations regarding site significance and National Register of Historic Places eligibility. Through consultation with the Louisiana State Historic Preservation Officer we have determined that the project will not affect cultural resources.

Howard R. Bush

Howard R. Bush
Authorized Representative
of the Contracting Officer

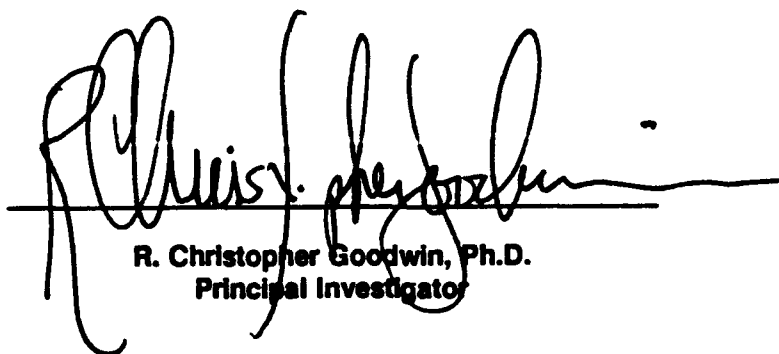
R. H. Schroeder, Jr.
R. H. Schroeder, Jr.
Chief, Planning Division

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DTIC	TAB <input type="checkbox"/>
Unannounced <input type="checkbox"/>	
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CULTURAL RESOURCES SURVEY OF THREE IBERVILLE PARISH LEVEE ENLARGEMENT AND REVETMENT CONSTRUCTION ITEMS

FINAL REPORT



R. Christopher Goodwin, Ph.D.
Principal Investigator

With

Rebecca E. Bruce, Lawrence L. Hewitt, and E. Jeanne Harris

**R. Christopher Goodwin & Associates, Inc.
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New Orleans, LA 70123**

September 1993

For

**U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267**

**Contract No. DACW29-86-D-0093
Delivery Order No. 0006**

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CHAPTER I

INTRODUCTION

The Project Area

Cultural resources investigation of three Iberville Parish levee enlargement and revetment construction items was conducted by R. Christopher Goodwin & Associates, Inc. from March to July, 1988. These investigations were undertaken pursuant to Contract DACW29-86-D-0093, Delivery Order Number 6, for the U.S. Army Corps of Engineers, New Orleans District. The project reach is located between river miles 204.0 and 191.0, along the east (left descending) bank of the Mississippi River in Iberville Parish, Louisiana (Figure 1). The study area is the Mississippi River batture, extending from the riverside toe of the Mississippi River Levee to the low waterline of the riverbank.

Within this study area, pedestrian survey was undertaken of approximately 4.6 miles of batture land between river miles 204.0 to 203.2-L; 202.5 to 202.2-L; 198.6 to 196.0-L; and, 191.9 to 191.0-L (Figures 2 and 3). A total of 167.25 acres were surveyed. These areas are slated for construction of the St. Gabriel Levee Enlargement; the St. Gabriel Revetment; and, the New River Bend Revetment. Three proposed borrow pits will be located at miles 202.2, 198.5, and 198.0-L (Figure 1); this study considers the potential impact to subsurface cultural resources at an excavation depth of 15 feet. The area between miles 205.8 and 198.8 was surveyed previously by the National Park Service, Denver Service Center, in 1984, for the U.S. Army Corps of Engineers, New Orleans District. River Miles (RM) 203.0 to 198.6 were revetted by the Corps of Engineers in 1984, based upon the results of the National Park Service survey. The construction phase was monitored by the U.S. Army Corps of Engineers archeological staff. One previously unrecorded site was discovered during construction and was tested by Ms. Carroll Kleinhans, a Corps of Engineers archeologist. This report incorporates the results of the 1984 National Park Service survey and the 1988 survey of the remainder of the construction reaches within the project area. The current survey and testing effort was designed to build upon and augment the 1984 National Park service pedestrian survey.

Planned Construction

The St. Gabriel Levee Enlargement project will bring the existing levee up to design grade through levee enlargement, slope paving replacement, and riverside berm construction. Adverse impacts to cultural resources can be anticipated within a seventy-five foot wide corridor adjacent to the riverside toe of the levee. Within this corridor, the top three feet will be disturbed to construct drainage improvements and short berms. The National Park Service survey did not locate any cultural resources within this corridor. The excavation of three riverside borrow pits also could impact subsurface cultural resources to a maximum depth of fifteen feet below surface.

The St. Gabriel and New River Bend Revetments will stabilize the bankline with a continuous, articulated concrete mattress laid from the low waterline to a point several hundred feet into the river channel. In addition to clearing a 200 - 300 foot wide construction corridor, the upper bankline will be removed and graded to a standard slope. As a result of these activities, any cultural resources within 300 horizontal feet of the bankline and within 10 vertical feet of the ground surface will be at risk to construction impacts. Subsurface resources farther than 300 feet from the bankline will not be effected.

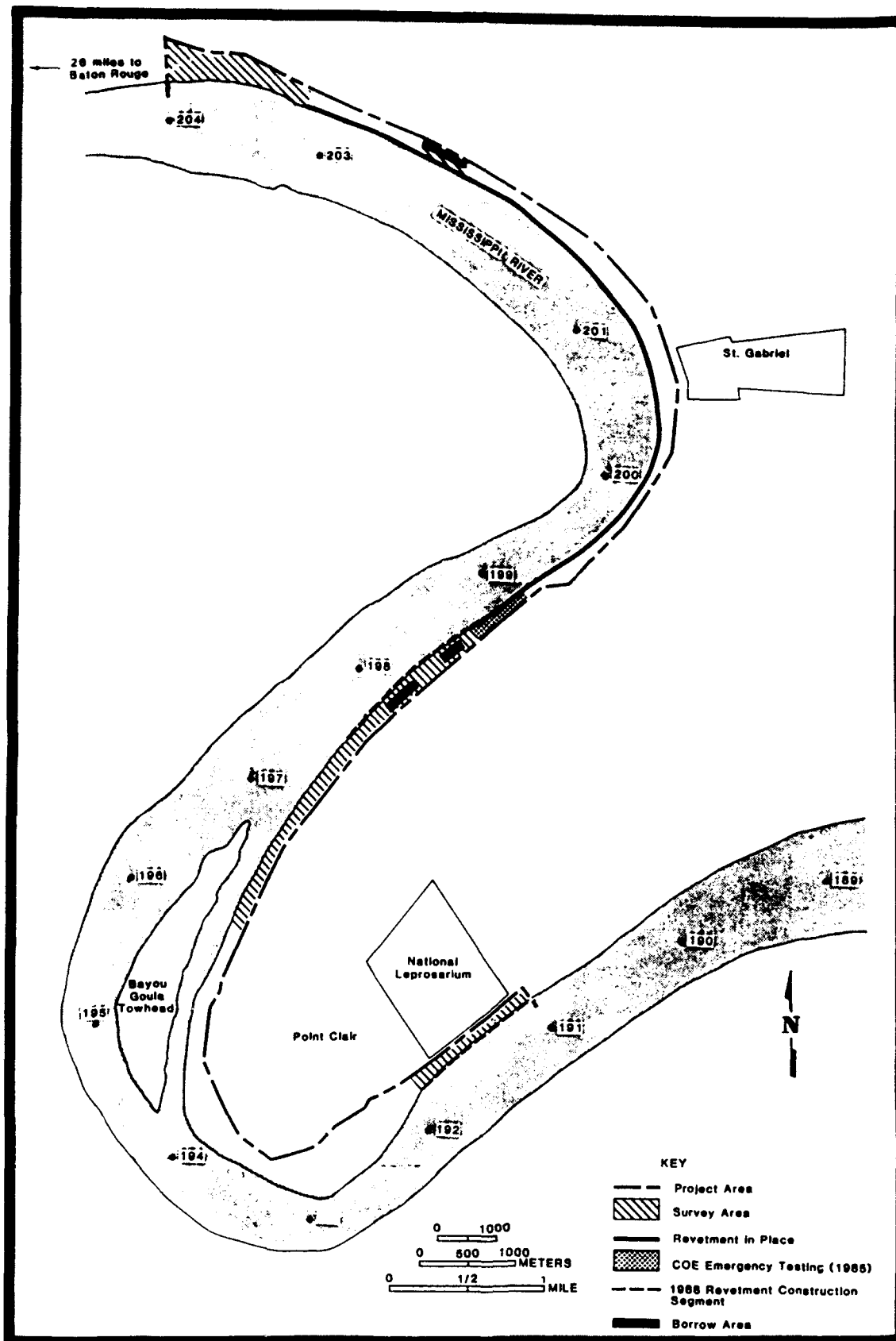


Figure 1. Excerpt from Charts 31, 32, and 34 Mississippi River Hydrographic Survey, showing the location of the project reach, borrow areas, and construction segments.

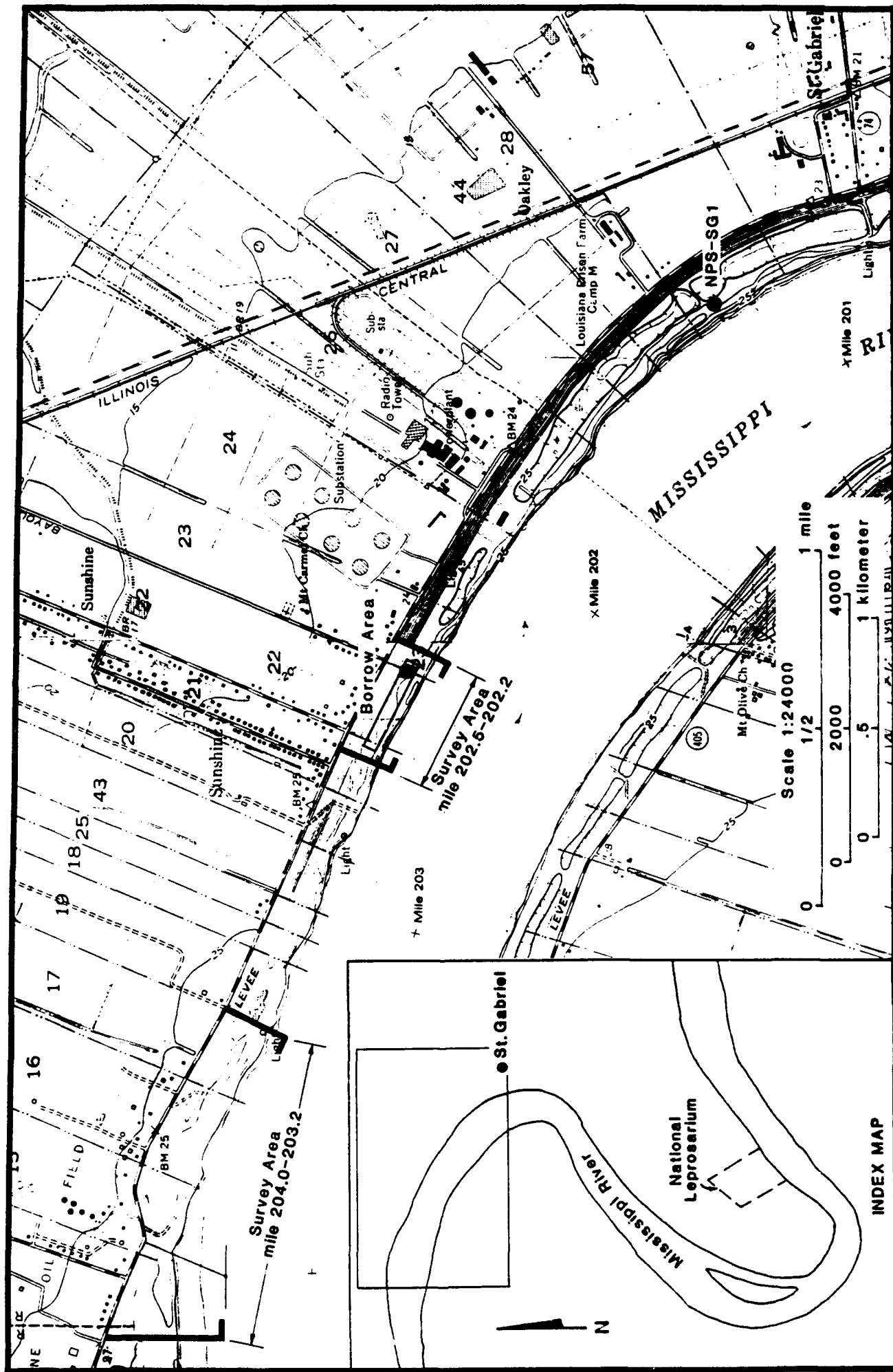


Figure 2. Excerpt of the Plaquemine and St. Gabriel 7.5' quadrangles, showing the location of the survey areas between River Miles 204.0 - 203.2 and 202.5 - 202.2.

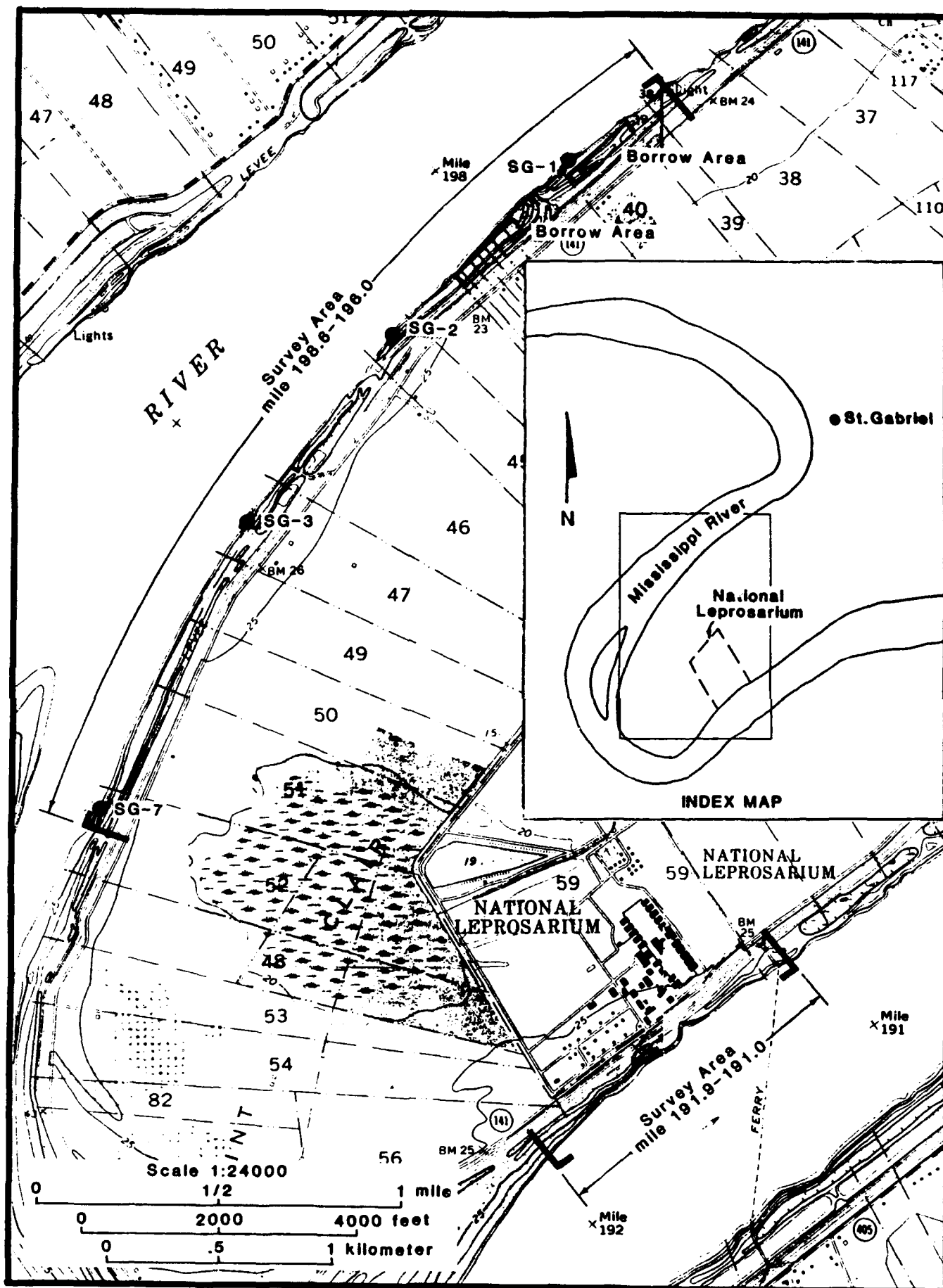


Figure 3. Excerpt from the White Castle and Carville 7.5' quadrangles, showing the location of the survey areas between River Miles 198.6 - 196.0 and 191.9- 191.0.

Organization of the Research

Research for this project was conducted in five stages. A background and archival research phase, consisting of a map and literature search and an historic records review for the entire project reach (mile 204.0 to 191.0), was undertaken prior to and coterminous with the first stage of fieldwork. Archeological survey of 4.6 miles of batture lands followed. Archeological sites discovered during the survey were tested and evaluated for research potential and integrity. This assessment effort included a second stage of archival research, whereby specific information about each site was sought in archives and in courthouse records. Finally, laboratory analyses of recovered remains was undertaken. Together, these five stages of research provided information applied during assessments of significance, and in the formulation of recommendations for treatment of specific resources.

There was one exception to the sequence of work just described. The two borrow pits at miles 202.2 and 198.5 were tested early during fieldwork to facilitate Corps of Engineers planning for data recovery, had it been necessary. Backhoe trenching was used to provide immediate information regarding stratigraphy and the presence or absence of deeply buried archeological sites. Historic maps showed structures formerly located in these vicinities; before the backhoe trenches were excavated, these maps were examined and trench locations corresponding to the historic structural locations were selected and plotted on field maps for subsequent excavation. As will be seen, positive evidence of historical activity was identified in two of these trenches.

Organization of the Report

Chapter II of this report presents a summary of previous archeological and historical investigations in the area containing the St. Gabriel and New River Bend projects, and examines known site distributions along the batture. Prior surveys and testing efforts by the National Park Service, Denver Service Center, and by the U.S. Army Corps of Engineers, New Orleans District, also are discussed in Chapter II. The environmental setting of the project area, and its geomorphology and man-land relationships are described in Chapter III. In addition, this chapter reviews the history of riverine and bankline migration and of levee construction in the project area.

Chapter IV summarizes the history of the region, focusing on themes significant to the regional and local history. Expectations concerning the nature and location of potential historic resources are generated, trajectories of economic change and their impact on historic man-land relationships in the study area are discussed. The methods and results of archeological sites located during survey are reviewed in Chapter V. Sites located during survey are described in detail in Chapter VI. Additional site-specific archival information is incorporated into these descriptions, to supplement data obtained during archeological testing. Laboratory methods and artifact analyses are discussed in Chapter VII. Chapter VIII provides interpretations, evaluations, and recommendations for each of the archeological sites identified during fieldwork. The appropriate cultural resources management requirements of each of the sites also are discussed in Chapter VIII.

CHAPTER II

ARCHEOLOGICAL SETTING

Prehistoric Setting

Introduction

Louisiana's Comprehensive Archaeological Plan (Smith et al. 1983) divides the state into six management units. The project area is situated along the east bank of the Mississippi River, in Iberville Parish, one of 14 parishes contained within Management Unit V. This management unit is dominated by the Mississippi River alluvial valley; it extends southeast from Pointe Coupee Parish to the mouth of the Mississippi River in Plaquemines Parish. Six cultural units form the prehistoric sequence of this management unit: Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, Plaquemine, and Mississippian. The preceding Paleo-Indian and Archaic cultural periods are not discussed below since the vicinity of the project area was not formed until Poverty Point times.

Poverty Point Culture (2000 - 500 B.C.)

Poverty Point (16WC5), the type site for Poverty Point culture, is located in northeastern Louisiana, adjacent to Bayou Maçon, and near several major rivers, including the Mississippi, Tensas, Ouachita, and Boeuf. During the occupation of Poverty Point, the Arkansas River flowed a short distance west of Site 16WC5. Its riverine location made it ideal for exploiting the flow of trade goods from other regions (Muller 1983; Neltzel and Perry 1977; Neuman 1984; Smith et al. 1983). Evidence of long distance trade at Poverty Point includes ceramics from the St. Johns River region of northeastern Florida; lithic materials from deposits in Arkansas, Illinois, Indiana, Missouri, Ohio, Oklahoma, and Tennessee; and, native copper from the Lake Superior region (Neuman 1984). Poverty Point culture may represent the first chiefdom-level society to develop in the eastern United States (Muller 1983; Smith et al. 1983).

Poverty Point (16WC5) is distinguished primarily by its large earthworks and its complex microlithic industry. The earthworks include six segmented ridges, 15 to 46 m (50 to 150 ft) wide, that form five sides of an octagon, and several other Poverty Point mounds scattered throughout the immediate site area. The largest mound, Mound A, may be a large bird effigy. At the time of its construction, Poverty Point was the largest earthwork in the Americas (Neuman 1984).

Poverty Point culture exhibited an elaborate lapidary technology that typically utilized exotic lithic materials such as red jasper, quartzites, quartz crystals, magnetite, hematite, talc, various slates, galena, limonite, feldspar, fluorite, amethyst, and various translucent stones. Many of these materials were imported from throughout the central United States. The majority of the lapidary items consist of a variety of well-formed and decorated beads and pendants (Neuman 1984).

Vessel fragments occasionally are recovered from Poverty Point sites. These include both steatite vessels and fiber-tempered pottery. While its use was not widespread, the fiber-tempered pottery marked the initial manufacture and utilization of pottery in the region. Numerous clay cooking balls, called Poverty Point objects, also are recovered from Poverty Point sites. These balls, which exhibit a variety of shapes, sizes, and decorations, apparently were heated by fire and used to cook food (Neuman 1984; Smith et al. 1983).

Poverty Point sites typically are found on Quaternary terraces or older land masses overlooking major stream courses, along major river levees of active or relict river channels, at river-lake junctions, and along coastal estuaries or older land surfaces located within a coastal marsh area. These sites appear to be located in areas ideal for exploiting forest-edge resources. Settlement typically consisted of large regional centers surrounded by a cluster of small hamlets (Neltzel and Perry 1977; Neuman 1984; Smith et al. 1983). No Poverty Point sites have been identified along the Mississippi River in the vicinity of the project area.

Tchefuncte Culture/Tchula Period (500 B.C. - A.D. 100)

The Tchefuncte culture is characterized by the first widespread use of pottery, although within the context of a Late Archaic-like hunting and gathering tradition, and with a Late Archaic-like tool inventory (Neuman 1984; Smith et al. 1983). The Tchefuncte culture first was identified at the Tchefuncte site (16ST1), on the northern shore of Lake Pontchartrain (Ford and Quimby 1945; Weinstein and Rivet 1978). Originally, Tchefuncte culture was thought to be an adaptation to the southwestern Louisiana coast and to the central portion of the Vermilion River in south central Louisiana. Tchefuncte or Tchefuncte-like ceramics now have been found in southeastern Missouri, northwestern Mississippi, the Yazoo Basin, coastal Alabama, and northeastern and southeastern Texas (Neuman 1984; Smith et al. 1983).

Most Tchefuncte sites are classified as coastal middens, or as inland villages or hamlets. Settlements usually occurred along slack water environments of slow secondary streams that drained bottomlands, floodplain lakes, and littoral zones (Neuman 1984; Smith et al. 1983).

Six coastal Tchefuncte and Tchefuncte-like phases have been identified in Louisiana and eastern Texas, including Pontchartrain, Beau Mire, Lafayette, Grand Lake, Sabine Lake, and Clear Lake. Only one, the Beau Mire phase, is situated in the vicinity of the project area. The Beau Mire phase is identified as a late Tchula period phase situated in the Mississippi River region between Baton Rouge and the Convent, Louisiana area. The type site, Beau Mire (16AN17), is an earthen midden located within a cane field situated adjacent to New River, a crevasse distributary of the Mississippi River. The phase is differentiated from the nearby Pontchartrain phase by its distinctive ceramic assemblage. Dominant Beau Mire phase ceramic types include Orleans Punctated, Tammany Punctated, and Lake Borgne Incised; small quantities of Tchefuncte Stamped ceramics also are common. On the other hand, sandy paste Mandeville wares and Alexander Series wares, both of which are prominent at Pontchartrain phase sites, are lacking at Beau Mire phase sites. Design characteristics such as broad-line incising and cross-hatched rims, both of which suggest a Marksville influence, indicate the Beau Mire phase dates from the late Tchula period (Weinstein 1986; Weinstein and Rivet 1978).

The Beau Mire lithic assemblage is dominated by dart points, primarily Shumla points. A variety of chipped adzes or celts also have been recovered, along with a few Jaketown perforators. To date, all identified Beau Mire sites have been classified as earthen middens (Weinstein 1986).

Tchefuncte subsistence systems continued to rely on hunting, gathering, and utilization of marine resources. Faunal remains recovered from Tchefuncte (16ST1) included deer, opossum, muskrat, fox, otter, raccoon, bear, wildcat, dog, a variety of birds, alligator, alligator gar, catfish, drum, clam, oyster, and marine conch. Flora recovered from other Tchefuncte sites include squash, gourd, hickory nuts, persimmons, wild plum, and grapes (Smith et al. 1983).

Marksville Culture (A.D. 100 - 400)

Marksville culture, named for the Marksville site (16AV1) in Avoyelles Parish, often is viewed as a localized version of the elaborate midwestern Hopewell culture. Marksville peoples apparently used a hunting, fishing, and gathering subsistence strategy much like those used by earlier cultures. A more highly organized social structure is implied by the complex geometric earthworks, conical burial mounds, and unique mortuary ritual system. Some items, such as elaborately decorated ceramics, were manufactured primarily for inclusion in burials. Burial items also included pearl beads, carved stone effigy pipes, copper ear spools, copper tubes, galena beads, and carved coal objects. Towards the end of this Marksville period, Hopewellian influence declined, and mortuary practices became less complex (Neuman 1984; Smith et al. 1983).

Ceramic decorative motifs such as cross-hatching, U-shaped incised lines, zoned dentate rocker stamping, cord-wrapped stick impressions, stylized birds, and bisected circles were shared by Marksville and Hopewell cultures (Smith et al. 1983). Additional Marksville traits include a chipped stone assemblage of knives, scrapers, celts, drills, ground stone atlatl weights and plummets, bone awls and fishhooks, baked clay balls, and medium to large stemmed projectile points. A variety of exotic artifacts commonly found at Marksville sites suggests extensive trade networks and possibly a ranked, non-egalitarian society. Some commonly found exotic items include imported copper earspools, panpipes, platform pipes, figurines, and beads (Neuman 1984; Smith et al. 1983). The utilitarian material culture remained essentially unchanged, reflecting an overall continuity in subsistence systems (Smith et al. 1983).

Troyville-Coles Creek Culture (A.D. 400 - 1100)

Troyville culture, named after the mostly destroyed Troyville mound group (16CT7) in Jonesville, Louisiana, represents a transitional culture that culminated in Coles Creek culture around A.D. 700 (Smith et al. 1983). Both subsistence agriculture and the bow and arrow developed during this time, which radically altered subsequent prehistoric lifeways. Troyville artifact assemblages reflect these changes; differences include larger vessel size and shapes of pottery (food storage vessels), the appearance of shell hoes and other cultivational implements, and utilization of smaller points for arrows as opposed to spears. During Troyville, maize, bean, and squash agriculture became widespread, leading to more complex patterns, vis-à-vis settlement, subsistence and social organization.

Coles Creek culture emerged from Troyville around A.D. 700. Coles Creek sites appear to be larger, more numerous, and more complex than those of their predecessors. The platform and ceremonial mound construction, and the complex layout of some Coles Creek sites, imply the emergence of a chiefdom-like society (Muller 1983; Smith et al. 1983). These social changes reflect the stable food supply fostered by adoption of agriculture and the bow and arrow during the preceding Troyville times.

Coles Creek peoples continued to use Troyville wares, with some elaborations. The Churupa Punctate and the Mazique Incised designs, both of which are characteristic of Troyville culture, were used by both Coles Creek and Plaquemine pottery makers (McIntire 1958). Similarly, French Fork Incised, which formed the basis for many Troyville classifications, continued to be used by Coles Creek peoples (Phillips 1970).

A new ceramic complex that included larger vessels and a wider range of decorative motifs, usually situated on the upper half of the vessel, also was utilized (Neuman 1984). Coles Creek Incised, Beldeau Incised, Mazique Incised, and Pontchartrain Check Stamped characterize the culture. A distinctive decorative type, Coles Creek Incised, contains a series of incised lines near the rim of the vessel, often accompanied underneath by a row of triangular impressions (Smith et al. 1983). Some ceramic motifs suggest outside cultural influences. For example, zoned rocker stamping, incised lines, and curvilinear

motifs are representative of decorative styles associated with the Florida Gulf Coast; cord marking and red filming were popular traits commonly used in the central Mississippi area (Smith et al. 1983).

The majority of Coles Creek sites were situated along stream systems where soil composition and fertility were favorable for agriculture. Natural levees, particularly those situated along old cutoffs and inactive channels, appear to have been the most desirable locations (Neuman 1984).

Larger Coles Creek sites are characterized by large flat-topped pyramidal mounds; at larger, multiple mound sites, mounds typically were constructed around an open plaza. While burials at times were located within them, these mounds primarily served as building platforms. Wattle and daub "temple" structures surmounted these earthworks. At some Coles Creek sites, the mounds were connected by low, narrow causeways.

The complexity of Coles Creek mound systems suggests a more intricate social structure; a centralized authority and sizable labor force must have existed to build, maintain, and utilize these mounds. The centralized authority apparently was of a special religious class and occupied the larger mound sites; the general population lived in the region surrounding the large ceremonial centers (Neuman 1984; Smith et al. 1983).

Small Coles Creek sites consist mostly of hamlets and shell middens; they normally do not contain mounds. Coles Creek shell middens commonly occur in the coastal region on the higher portions of natural levees (Springer 1974).

Plaquemine Culture (A.D. 1100 - 1600)

The Plaquemine culture represents an indigenous development that emerged from Coles Creek. The Medora site, 16WBR1, described by Quimby (1951), typifies Plaquemine culture. Plaquemine peoples continued the settlement patterns, economic organization, and religious practices established by the Coles Creek cultures; however, agriculture, sociopolitical structure, and religious ceremonialism intensified. Plaquemine sites are characterized as ceremonial sites with multiple mounds facing a central plaza, and surrounded by dispersed villages and hamlets (Smith et al. 1983).

Although derived from the Coles Creek tradition, Plaquemine ceramics display distinctive features that mark the emergence of a separate culture. Plaquemine ceramics were tempered with a variety of materials, including shell. Brushing became the dominant decorative technique, although earlier techniques such as incising and punctating pottery continued. Engraving vessels after firing also became popular (Smith et al. 1983). Plaquemine Brushed appears to have been the most widespread ceramic type. Other ceramic types utilized by Plaquemine culture include Evansville Punctate, Hardy Incised, Harrison Bayou Incised, L'Eau Noire Incised, Leland Incised, Manchac Incised, and Mazique Incised. Decorated wares and plain wares (e.g., Anna Burnished Plain and Addis Plain) were well-made. Vessel shapes remained similar to earlier ceramic types.

Mississippian Culture (A.D. 1100 - 1700)

Late in the prehistoric period, the indigenous Plaquemine culture was influenced by Mississippian culture. Mississippian influence radiated from the middle Mississippi River Valley to southern Louisiana, into central North Carolina, and northward into the Great Lakes region (Haag 1971). Mississippian culture was characterized by large urban centers associated with mound groups, lavish burials and grave goods, and shell-tempered pottery. Mississippian sites in Louisiana typically are located along the extreme southeastern

coast and in an isolated pocket in the northeast part of the state. Mississippian culture continued to influence lifeways of southern Louisiana until contact with European cultures.

Mississippian subsistence was based on the cultivation of maize, beans, squash and pumpkins; collection of local plants, nuts and seeds; and, fishing and hunting of local faunal species. Major Mississippian sites were located on fertile bottomlands of major river valleys; sandy and light loam soils usually composed these bottomlands. A typical Mississippian settlement consisted of an orderly arrangement of village houses, surrounding a truncated pyramidal mound. These mounds served as platforms for temples or as houses for the elite. A highly organized and complex social system undoubtedly existed to support these intricate communities.

Mississippian pottery is characterized by shell tempering, an innovation that enabled potters to create larger vessels (Smith et al. 1983). Ceramic vessels included short and tall globular jars, deep and shallow bowls, footed vessels, plates, stirrup-handled bottles, effigy vessels, and gourd forms. Decorative techniques include engraving, negative painting, incising, brushing, punctating, pinching, polishing, and applique. Modelled animal heads and anthropomorphic images also adorned ceramic vessels. Other Mississippian artifacts include chipped and ground stone tools; shell items such as hairpins, beads, and gorgets; and, mica and copper items (Neuman 1984).

Previous Investigations

Previous Cultural Resources Surveys in the Vicinity of the Project Area

Several cultural resources surveys have been conducted in the vicinity of the project area, which has been defined as the Mississippi natural levee from River Miles 207 downriver to the Iberville - Ascension parish line, near River Mile 187.3. Quimby (1957) reported on a Plaquemine Culture ceremonial center, the Bayou Goula site (16IV11); it is situated on the west bank of the Mississippi River near Bayou Goula, Louisiana. The site, excavated in 1941, was comprised of two platform mounds dating from the Coles Creek to Plaquemine stage, and also contained an historic contact component. The mounds appear to have been constructed in stages, with the larger mound, Mound 1, constructed in three stages. These mounds probably were constructed during prehistoric times, and may not have been used during the early contact period. Aboriginal occupation continued into the early historic period. While the documents are inconclusive, the initial French contact with the aboriginal village at 16IV11 occurred either during the 1699 Iberville exploration of the Mississippi River, or during the 1718 Paris concession (Quimby 1957; Giardino 1984).

Woodiel (1980a, 1980b) reported on the 1977 through 1978 excavations at the St. Gabriel site (16IV128), on the Mississippi River natural levee northeast of St. Gabriel, Louisiana. The St. Gabriel site was a late Coles Creek to early Plaquemine Culture ceremonial center. At the time of its excavation, the site included one earthen mound and the largely destroyed adjacent village site. The excavated mound was similar to those excavated at the Medora site (16WBR1) and Bayou Goula (16IV11). It also was built in stages, in association with buildings (temples). Woodiel noted two settlement patterns. For example, the St. Gabriel site was located on the backslope of the natural levee of the Mississippi River, between the natural levee crest and the backswamps, and adjacent to a probable prehistoric crevasse (water source). This placed the site near two distinct ecozones, the natural levee and the backswamp, allowing the inhabitants to exploit a wider variety of faunal and floral resources than would be available in a single ecozone. These food resources included large and small mammals, birds, turtles, fish, persimmon, honey locust seeds, and at least some corn. In addition, Woodiel noted that other prehistoric sites along the Mississippi River often were situated in the vicinity of the cutting bank of a meander loop (Woodiel 1980a, 1980b).

McIntire (1980) conducted a Level I survey of a proposed sewer system, which extended from Sunshine, Louisiana, through St. Gabriel and Jerusalem, and terminated at Carville, Louisiana. Survey included both pedestrian reconnaissance and limited subsurface testing in areas of perceived high probability. While no cultural resources were identified within the survey corridor, McIntire recognized the high probability of finding sites along the Mississippi River natural levee, and recommended more intensive subsurface testing prior to construction of the sewer line.

The following year, McIntire (1981) surveyed a planned pipeline corridor that extended from Weeks Island, Louisiana, northeastward to the Louisiana/Mississippi state line at the northern edge of St. Helena Parish. The pipeline corridor crossed the Mississippi River approximately 0.7 km (0.4 mi) upriver from Carville, and extended northeastward near Bayou Braud. Survey included pedestrian reconnaissance and the excavation of widely scattered shovel tests in areas considered to have a high probability for containing cultural deposits. No archeological sites were identified during survey of the project corridor.

Tulane University (Yakubik et al. 1981) surveyed a portion of Plaquemine Point prior to construction of the proposed Manchac Oil Refinery. Several components of the nineteenth and twentieth century Forlorn Hope Plantation site (16IV138) were identified during the survey. Portions of the site were evaluated as potentially significant; however, these resources were located outside the proposed construction impact area. Additional testing was recommended should the potentially significant resource become threatened.

Fredlund (1982) examined two eighteenth century archeological sites at Bayou Goula. Site 16IV134 was located on a natural levee of a former channel of the Bayou Goula distributary. The site contained a large subassemblage of Native American ceramics in association with eighteenth century Euro-American remains. Artifacts included Leland Incised and Mississippian shell tempered ceramics. Historic trade items included beads, gun flints, pipes, and European ceramics. Fredlund (1982) argued that 16IV134 may have been the site of the Bayougoula-Mugulasha village visited by d'Iberville in 1699. By the time of European contact, the region around White Castle was occupied by the Bayougoula Indians. In 1699, Pierre Le Moyne d'Iberville and a small expedition encountered a Bayougoula-Mugulasha village. Iberville was accompanied by Father Paul Du Ru, a Jesuit missionary, who eventually supervised the construction of a church at the Bayougoula-Mugulasha village. In fact, Bayou Goula may be considered the oldest French settlement in Louisiana. However, later that same year the church was destroyed amid intertribal conflict and the Bayougoula Indians later fled the area after having been attacked by the Tensas Indians. By 1718, the region of Bayou Goula was settled by the Chitimacha (Giardino 1984). Site 16IV11, traditionally thought to have been the Bayougoula-Mugulasha Village, apparently conforms more closely to historical descriptions of the du Buisson-du Vernax Concession of 1718 (Giardino 1984).

Bryant et al. (1982) reported on a bankline survey near the town of Bayou Goula, at the Tally Ho Plantation site (16IV135), a large nineteenth century sugar plantation. However, bankline erosion and levee construction had disturbed the site in that area. The majority of remains, which dated from the nineteenth and twentieth centuries, were recovered from the surface. No additional testing of the site was recommended.

In 1982, Stuart and Greene (1983) examined the proposed Plaquemine Bend Revetment, located on the west bank of the Mississippi River, downriver from the city of Plaquemine. An intensive pedestrian survey was conducted within the approximately 6.3 km (3.9 mi) long project area. No cultural resources were encountered during survey.

Shafer et al. (1984) examined the 12.8 km (8 mi) St. Gabriel Levee alignment prior to enlargement of the levee by the U.S. Army Corps of Engineers, New Orleans District. Their survey corridor extended from approximately 5 km (3.1 mi) upriver from Sunshine, to 3.7 km (2.3 mi) downriver from St. Gabriel. One historic archeological site, 16IV142, was recorded near St. Gabriel. This site consisted of three concrete foundations dating from the late nineteenth to early twentieth century. Shafer et al. (1984) tentatively

associated these remains with an early twentieth century ferry landing; they suggested that the site probably was not a significant cultural resource. Site 16IV142 was re-examined during the current investigations.

Bryant (1985) surveyed a 17.7 km (11 mi) long proposed pipeline corridor for Shell Oil Company in Iberville and Ascension parishes. This corridor extended along the eastern boundary of Iberville Parish within the vicinity of the current project area. Two historic spot finds were recorded: Spot Find X16IV F on the west bank of the Mississippi River natural levee, and Spot Find X16IV G on the east bank of the Mississippi River natural levee. Numerous brick fragments, two pearlware fragments, and a piece of whiteware were observed within the Spot Find X16IV F area. A 3 m (10 ft) diameter amorphous brick pile and a fragment of Albany slip stoneware also were located at Spot Find X16IV G. While no excavation units were placed within either location, Bryant (1985) evaluated both locations as not significant, because of the observed apparent dearth of in situ deposits and features. No additional archeological testing of the project area was recommended.

In 1984, R. Christopher Goodwin & Associates, Inc., conducted a cultural resources survey for the U.S. Army Corps of Engineers, New Orleans District. This survey involved examination of five revetment items in Plaquemines, St. James, Ascension, and Iberville parishes (Goodwin et al. 1985). Survey near the project area occurred along the New River Bend revetment, which is situated on the Mississippi River batture from the Carville Ferry downriver 5.2 km (3.25 mi), past Carville. Survey consisted of pedestrian survey augmented by systematic shovel testing. Three sites were recorded during survey. Hard Times Plantation (16IV143) contained extensively damaged late nineteenth and early twentieth century plantation remains. Carville Dump (16IV144) consisted of a twentieth century and modern dump on the batture in front of Carville. New River Bend 1 (16IV145) consisted of the remains of a nineteenth to early twentieth century boiler foundation. None of these sites possessed the qualities of significance as defined by the National Register of Historic Places criteria of evaluation (36 CFR 60.4 [a-d]), and no additional testing was recommended.

Goodwin, Gendel et al. (1987) reported the results of a cultural resources survey of the White Castle Revetment Item. The approximately 2.6 km (1.6 mi) long project area was situated directly across the river from the Gillis W. Long Hansen's Disease Center (U.S. Public Health Service Hospital No. 66). During survey, five archeological sites were identified (Sites 16IV147 - 16IV151). These sites generally consisted of nineteenth and early twentieth century archeological deposits associated with the plantations. Based on collected data, two of these sites, Sites 16IV147 and 16IV149, were evaluated as potentially significant cultural resources; additional testing of these two sites was recommended.

Sites 16IV147 and 16IV149 subsequently were tested and evaluated by R. Christopher Goodwin & Associates, Inc. (Goodwin, Armstrong et al. 1988). Both sites were eroding out of the bankline. One, Site 16IV147, contained the remains of a small, partial brick floor feature otherwise devoid of artifacts; it tentatively was interpreted as the residual remains of a furnace. The other site, Site 16IV149, contained small amounts of domestic refuse from the mid-nineteenth century; this debris may have been associated with Celeste Plantation. Based on their low archeological integrity and limited research potential, both of these sites were evaluated as not significant cultural resources; no additional testing was recommended at these two sites.

U.S. Army Corps of Engineers Emergency Testing

Test excavations and the evaluation of Site 16IV146 were conducted by Ms. Carroll Kleinhans, a former archeologist with the New Orleans District, Corps of Engineers. According to the New Orleans District, U.S. Army Corps of Engineers, Ms. Kleinhans has all the records and documents regarding the testing of Site 16IV146. Despite several requests from the New Orleans District, U.S. Army Corps of Engineers, Ms. Kleinhans has yet to provide any records and/or documentation on the emergency testing.

According to Ms. Kleinhans, the site was disturbed and did not warrant additional investigation. Mr. Steve Smith (Historic Archeologist, Louisiana State Historic Preservation Office) visited the site and concurred with Ms. Kleinhans (Kenneth A. Ashworth, personal communication 1993).

Previously Recorded Archeological Sites Located near the Project Area

Fifteen previously recorded archeological sites are situated within the vicinity of the project area (Table 1). These sites included two prehistoric Native American sites (one with an early historic component), nine historic Euro-American sites, and four sites with both prehistoric Native American and historic Euro-American components.

A total of six sites contain Native American components. The Bayou Goula site (16IV11) consists of a Coles Creek and Plaquemine village site which included two earthen mounds. The site continued to be occupied into the early 1700s. The nearby Clara Murray Place (16IV12) is a generally contemporaneous Plaquemine village site that also contains two earthen mounds. Both of these mounds have been plowed down considerably. A third mound site, the St. Gabriel Mound site (16IV128) contained two late Coles Creek to early Plaquemine mounds; one of these mounds survived into the 1980s. This surviving mound was excavated prior to construction of a prison; the site now has been destroyed. Sites 16IV11 and 16IV12 have not been evaluated. The remaining sites with Native American components all contain prehistoric ceramic scatters; these sites included 16IV135, 16IV148, and 16IV151. The prehistoric components at these three sites were assessed as not significant (Table 1).

Approximately eight of these sites include remains associated with nineteenth and early twentieth century plantations. Bayou Goula - Tally Ho (16IV135), Forlorn Hope - Grenada Plantation (16IV138), Hard Times Plantation (16IV143), Virginia Plantation (16IV146), White Castle 4 (16IV149), and White Castle 6 (16IV151) consist of nineteenth to early twentieth century scatters of domestic and architectural debris. While four of these sites (16IV135, 16IV143, 16IV149, and 16IV151), and the batture portions of the remaining two sites (16IV138 and 16IV146) were evaluated as not significant, the landside portions of Sites 16IV138 and 16IV146 were not evaluated. New River Bend 1 (16IV145) consisted of the apparent foundation remains of a plantation boiler, while White Castle 2 (16IV147) contained the probable remains of a destroyed plantation furnace. Both of these sites were evaluated as not significant cultural resources (Table 1). The non-batture plantation remains associated with these plantation sites have not been recorded (except for 16IV138 and 16IV146) or evaluated. Future construction within the latter areas should be preceded by a thorough archeological examination.

Five remaining components have been recorded in the area. The St. Gabriel Mound site (16IV128) also included an historic cemetery. Site 16IV142 contained the remains of three late nineteenth to early twentieth century concrete foundation; historic research conducted by Shafer et al. (1984) suggested that these remains were associated with a ferry landing. Carville Dump (16IV144) is a twentieth century dump that continues to be used; it is situated on the batture in front of Carville. Finally, White Castle 3 (16IV148) includes a nineteenth century artifact scatter, while White Castle 5 (16IV150) contains a late eighteenth or early nineteenth century artifact scatter. None of these sites possesses the qualities of significance as defined by the National Register of Historic Places criteria of evaluation (36 CFR 60.4 [a-d]), and none is considered eligible for inclusion on the National Register of Historic Places (Table 1).

Table 1. Previously Recorded Archeological Sites near the Project Area.¹

SITE NUMBER	NAME	SITE DESCRIPTION	LOCATION	TESTING	NRHP ELIGIBILITY	REFERENCES
16IV11	Bayou Goula	Coles Creek and Plaquemine village site with two mounds, which continued in use into the historic period	Mississippi River natural levee adjacent to Bayou Goula and the town of Bayou Goula	Excavation of the mounds, and limited testing of the surrounding site area	Unknown	Quimby 1957, Fredlund 1982
16IV12	Clara Murray Place	Plaquemine village site with two mounds	Mississippi River natural levee adjacent to Bayou Goula, and west of Site 16IV11	Surface collection	Unknown	Fredlund 1982
16IV128	St. Gabriel Mound	Late Coles Creek to early Plaquemine village site with two mounds; an historic cemetery also was present	Mississippi River natural levee near St. Gabriel, and adjacent to a prehistoric crevasse splay	Excavation of the mound which survived into the 1980s; limited testing of surrounding site area	Not eligible; site destroyed	Woodiel 1980a, 1980b
16IV135	Bayou Goula - Tally Ho	Nineteenth century plantation remains associated with Tally Ho Plantation, with a minor Neo-Indian component	Mississippi River bankline, south of Bayou Goula	Surface collection	Not eligible	Bryant et al. 1982
16IV138	Forom Hope - Granada Plantation	Nineteenth and twentieth century plantation remains, including two possible nineteenth century cabins, three twentieth century houses, and plantation archeological deposits	Plaquemine Point, with primary remains located in the southern portion of the point	Surface collection, shovel testing, limited unit excavation	Battle portion of the site not eligible; the remainder was not evaluated	Davis and Yakubik 1981 ² , Yakubik et al. 1981

Table 1, continued

SITE NUMBER	NAME	SITE DESCRIPTION	LOCATION	TESTING	NRHP ELIGIBILITY	REFERENCES
16IV142	SG #1	Late nineteenth to early twentieth century concrete foundation remains	Mississippi River batture, near St. Gabriel	Pedestrian survey	Not eligible	Shafer et al. 1984; examined during the current study
16IV143	Hard Times Plantation	Late nineteenth and early twentieth century batture plantation remains; damaged extensively by riverine cutting	Mississippi River batture, near Carville	Surface collection	Not eligible	Gendel 1984 ² ; Goodwin, Yakubik et al. 1985
16IV144	Carville Dump	Twentieth century and modern refuse deposit and dump on the batture	Mississippi River batture, near Carville	Surface collection	Not eligible	Gendel 1984 ² ; Goodwin, Yakubik et al. 1985
16IV145	New River Bend 1	Apparent remains of nineteenth or early twentieth century boiler foundation and associated debris	Mississippi River batture, between Carville and National Leprosarium	Surface collection	Not eligible	Emerson 1984 ² ; Goodwin, Yakubik et al. 1985
16IV146	Virginia Plantation	Nineteenth and early twentieth century batture remains associated with Virginia Plantation	Mississippi River batture, downriver from St. Gabriel	Surface collection; limited subsurface testing	Batture portion of site apparently not eligible	Guev'n 1985 ²
16IV147	White Castle 2	Historic brick scatter and thermally-altered soil, possibly associated with a destroyed furnace	Mississippi River batture, upriver from Cannonburg	Surface collection, shovel testing, auger testing, bankline profiles, unit excavation	Not eligible	Goodwin, Gendel et al. 1987; Goodwin, Armstrong et al. 1988

Table 1, continued

SITE NUMBER	NAME	SITE DESCRIPTION	LOCATION	TESTING	NRHP ELIGIBILITY	REFERENCES
16IV148	White Castle 3	Small scatter of Coles Creek ceramic sherds mixed with a few nineteenth century artifacts; the artifacts may be redeposited	Mississippi River batture, upriver from Cannonburg	Surface collection, shovel testing, limited auger testing	Not eligible	Goodwin, Gendel et al. 1987
16IV149	White Castle 4	Antebellum domestic debris associated with a portion of Celeste Plantation	Mississippi River batture, upriver from Cannonburg	Surface collection, auger testing, bankline profiles, unit excavation	Not eligible	Goodwin, Gendel et al. 1987; Goodwin, Armstrong et al. 1988
16IV150	White Castle 5	Sparse scatter of late eighteenth or early nineteenth century artifacts	Mississippi River batture, upriver from Cannonburg	Surface collection, limited shovel testing	Not eligible	Goodwin, Gendel et al. 1987
16IV151	White Castle 6	Historic artifact scatter which may be associated with the Celeste Plantation big house; a few prehistoric ceramic sherds also were recovered	Mississippi River batture, upriver from Cannonburg	Surface collection, shovel testing, auger testing	Not eligible	Goodwin, Gendel et al. 1987

¹Data from the State Site Files, Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge, Louisiana.

²Site recorder and date.

CHAPTER III

THE ENVIRONMENTAL AND GEOMORPHIC SETTING

The Natural Setting

Iberville Parish is located entirely within the Gulf Coastal Plain and the Mississippi River alluvial or deltaic plain. The Gulf Coastal Plain is defined as a gently rolling area with elevations under 500 feet. Elevations in the parish range from 25 feet above sea level along the natural levees of the Mississippi River, to sea level in the Atchafalaya Basin Floodway (U.S. Department of Agriculture [USDA] 1977). The Iberville Parish Levee Enlargement and Revetment project areas are located on the east (left descending) bank of the Mississippi River, between RM 204.0 and 191.0. The study areas are located on the batture, which incorporates the natural levee between the riverside toe of the present man-made levee and the river bankline.

The batture consists of level to gently undulating loamy Convent soils that are subject to deep, frequent flooding because of seasonal changes in river level (USDA 1977). Typically, the soils are stratified dark brown silts, dark brownish gray clay, and very fine brown sands, commonly found with dark brown mottling by ferrous oxides. All of these soils usually are represented in any one Convent stratigraphic unit. The order of occurrence and the thickness of deposits varies widely on the batture, due to flooding, scouring, deposition, and redeposition of soils and sediments. The Convent soils are fertile. Plant roots penetrate easily, and water and air move through the soil quickly. However, the potential for crop agriculture in this area is very poor due to flooding. As a result, most batture land is unimproved and virtually unutilized. Cattle grazing and borrowing are primary land uses. Docking facilities for nearby industries also are common.

The batture soils support vegetation typical of initial stages of ecological succession. Initial willow forest is dominated by black willow (*Salix nigra*), with cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), and hackberry (*Celtis laevigata*) comprising the major overstory vegetation. Sweetgum (*Liquidambar styraciflua*), green ash (*Fraxinus pennsylvanica*), nuttall oak (*Quercus nuttallii*), water oak (*Quercus arkansana*), elm (*Ulmus*), and pecan (*Carya illinoensis*) may occur at higher elevations. Poison ivy (*Rhus radicans*), Virginia and trumpet creeper (*Parthenocissus* sp.), green briar (*Smilax* sp.), and peppervine (*Ampelopsis* sp.) are the most prevalent understory vegetation (Bahr et al. 1983).

Important faunal species present today include deer, cottontail rabbit, swamp rabbit, opossum, raccoon, gray squirrel, fox squirrel and gray fox. In addition to these species, others that were formerly important in the region included black bear (*Euarctos americanus*), mountain lion (*Felis concolor*), and wolf (*Canis lupus*). In addition to mammalian species, birds, fish, and reptiles are common in habitats both within and near the project area (Shelford 1963; Lowery 1974).

Climatically, Iberville Parish is part of a broad region of the Southeastern United States that lies within a humid subtropical zone. Iberville is dominated by warm, moist, maritime tropical air from the nearby Gulf of Mexico (USDA 1977). Due to the low relief of the area, very little variation in the regional climate exists. Average annual precipitation is 145.3 cm (57.2 in). In July and August, the warmest months of the year, average daily temperatures range from a high of 32.8° C (91° F) to a low of 22.2° C (72° F). Average daily temperatures in January, the coolest month, range from a high of 17.2° C (63° F) to a low of 5.6° C (42° F). The first freezing temperatures occur, on average, in late November to early December, with the last freezing temperatures occurring in mid-February to early March (USDA 1977). The average growing season may last 295 days.

The cycle of delta formation and subsequent abandonment that is the dominant geomorphic process operating in southeastern Louisiana has been described in depth elsewhere (Goodwin et al. 1991; Goodwin, Wojtala et al. 1988). The major delta lobes of the Mississippi River are illustrated in Figure 4. More germane to this report is the formation of the Mississippi River deltaic plain, an area of about 13,000 square miles that includes most of the state below the town of Angola. This area can be divided into two parts, the upper and lower deltaic plains, of which the upper deltaic plain is the older.

The St. Gabriel Revetment and Levee Enlargement project areas are located in the upper deltaic plain of the Mississippi River, within the modern meander belt that the river has occupied for approximately 4,800 years (Saucier 1974:22). The upper deltaic plain lies above the area of significant tidal/marine influences and of salt water intrusion. It is usually a continuation of the upriver alluvial valley, in that riverine processes predominate (Coleman and Prior 1983:140). In the upper deltaic plain, deposits may be associated either with migratory channels (braided or meandering), or with lacustrine fills and floodplains. The floodplain may include backswamps, marshes, and freshwater lakes (Coleman and Prior 1983:140). Overbank flooding during annual high water periods and associated crevasses are important aspects of land formation and modification (Coleman and Prior 1983:140).

Fresh-water swamps, or backswamps, form in the interstitial areas of distributaries, as well as in areas flanking the backslope portions of the natural levees. Fine silts and clays, along with organic debris, are the aggrading materials in this subenvironment. These low-lying areas retain standing water for at least a portion of the year, with most areas remaining inundated year-round (Smith et al. 1986:25). Beyond the fringes of the fresh water swamps, areas of marsh develop. Marshes can be subdivided into fresh, brackish, and saline varieties. Each supports different floral and faunal communities. Marshes are characterized as areas of reeds and grasses that perennially retain standing water. The primary sediments consist of clays and large amounts of organic materials. The large volume of organic debris produced by a marsh environment results in thick layers of peat (Smith et al. 1986:25-26).

The Mississippi River delta region has undergone dramatic changes since the advent of man-made protection levees. "The greatest . . . influence on the modern delta is the artificial confinement of the Mississippi River" (Bahr et al. 1983:104). Control of the Mississippi River by levees and revetments has confined natural alteration, including deposition and erosion, to the batture. Prior to the completion of the modern levee system in the lower Mississippi River valley (1928 - 1936), the large swamp basins on both sides of the river transported and accumulated a large percentage of the overbank discharge. Since then, and without the seasonal overflow by the Mississippi River, bankline cutting and aggrading has increased along the river. River migration is a lateral movement in a downstream direction (Inglis 1947). Levees limit lateral migration and meandering within their confines. As a result, the confined lateral migration occurs with more power, and the once balanced alternating sequences of deposition, subsidence, and rejuvenation give way to the now dominant processes of erosion and subsidence. The increasing width of the Mississippi River in the lower delta region is evidence of this change.

The Effect of Riverine Processes on Cultural Resources

Changes in the landscape by natural agencies have implications for the preservation and recovery of archeological remains within the project area. Natural processes include overbank deposition and lateral migration of the river. At flood stages, the river inundates the batture but is prevented from spreading further by the artificial levee system. Flooding on the batture deposits sediments on the point bars of the batture, where they can cover both historic and prehistoric sites. Through desiccation and compaction of the clays, these sites can become more deeply buried. Without deep testing with backhoes, augers, or probes, historic and prehistoric sites rarely are found on the batture where exposure by erosion is not present. Most sites are found on the edge of the river where erosional processes have exposed them in cutbanks. On cut

banks, where scouring and subsequent slumping is a major process, sites also can be eroded and carried downstream.

Archeological Site Prediction

Site prediction in the alluvial and coastal plain is somewhat intuitive. Most frequently, archeologists have postulated site locations either based on the direct historical approach, e.g., historic map data, or on observed correlations between site types and land forms or specific terrain features. Alluvial plains, natural levees, point bar ridges, and low terrace escarpments are known to contain prehistoric sites. In the coastal plain region, sites most often are found on the natural levees of distributary channels, and on the beach ridges and salt domes of the Gulf Coast. These areas and landforms were preferred for a variety of reasons including: optimum soil drainage, permeability, and slight sloping; availability of natural resources; proximity to routes of transportation; and, protection from natural hazards (i.e. flooding, hurricanes, etc.). Because of the lack of behavioral models with higher order explanatory power in the regional archeology, geomorphic reconstruction remains the most popular technique for predicting site locations (Smith et al. 1986:73). It should be noted, however, that such methods predict only what land forms will contain sites. Although they may indicate where sites are, they do not indicate why. Thus, such models and methods are not explanatory.

It is likely that cultural resources have been buried on the batture. The burial of these remains occurs through vertical accretion or deposition of sediments during floods and high water stages. Prehistoric and older historic sites on the batture primarily are found eroding from cutbanks along the edge of the river. Field identification of buried sites requires both a knowledge of geomorphic processes within the area, and deep testing (Smith et al. 1986:75). A variety of fluvial processes affect the preservation and destruction of sites on the batture. Vertical accretion of sediments often is responsible for burying sites and thus preserving them in situ. The batture is built up through vertical accretion more than any of the surrounding countryside, because of the containment of this area by the artificial levee. The reach (the straight between meanders in the river, where erosion and lateral accretion is minimal), the batture (the land area between the cutbank and the artificial levee), and the top of the point bar are all subject to vertical accretion during flooding and high water stages.

The fluvial destruction of sites on the batture is caused primarily by the meandering of the river. Meandering is the lateral migration of the river channel that occurs as the river attempts to attain a dynamic equilibrium between various flow conditions, the type and amount of sediment load, bed and bank materials, and the channel slope or gradient (Smith et al. 1986:11). As the cutbank erodes the natural levee, artifacts and whole sites may be washed down stream. These artifacts may be redeposited on a point bar through lateral accretion. Once the remains are redeposited, they lack integrity. Sites that are not disturbed through water movement may be subjected to extensive sediment deposition. Although the site is not destroyed by this process, the large quantity of overburden makes the probability of discovery, using current standard pedestrian survey recovery techniques, minimal at best. In general, therefore, the primary cause of site destruction on the batture is lateral migration within the meander belt of the Mississippi River.

Site probability in the New River Bend Revetment, St. Gabriel Revetment, and St. Gabriel Levee Enlargement project areas was determined by evaluating the historic and current river processes operating on the batture as demonstrated by the composite maps drawn from historic and recent maps using the camera lucida (Figures 5 - 8). Table 2 shows the bankline condition and cultural resource potential for the project area by river mile. Aggrading banklines offer the best conditions for preserving archeological sites; however, the cartographic data base failed to produce any evidence of cultural resources in these areas. Unfortunately, those areas exhibiting a high resource potential were located on cutting banklines. Lateral migration by the river has long since destroyed any evidence of sites in these areas and their cultural

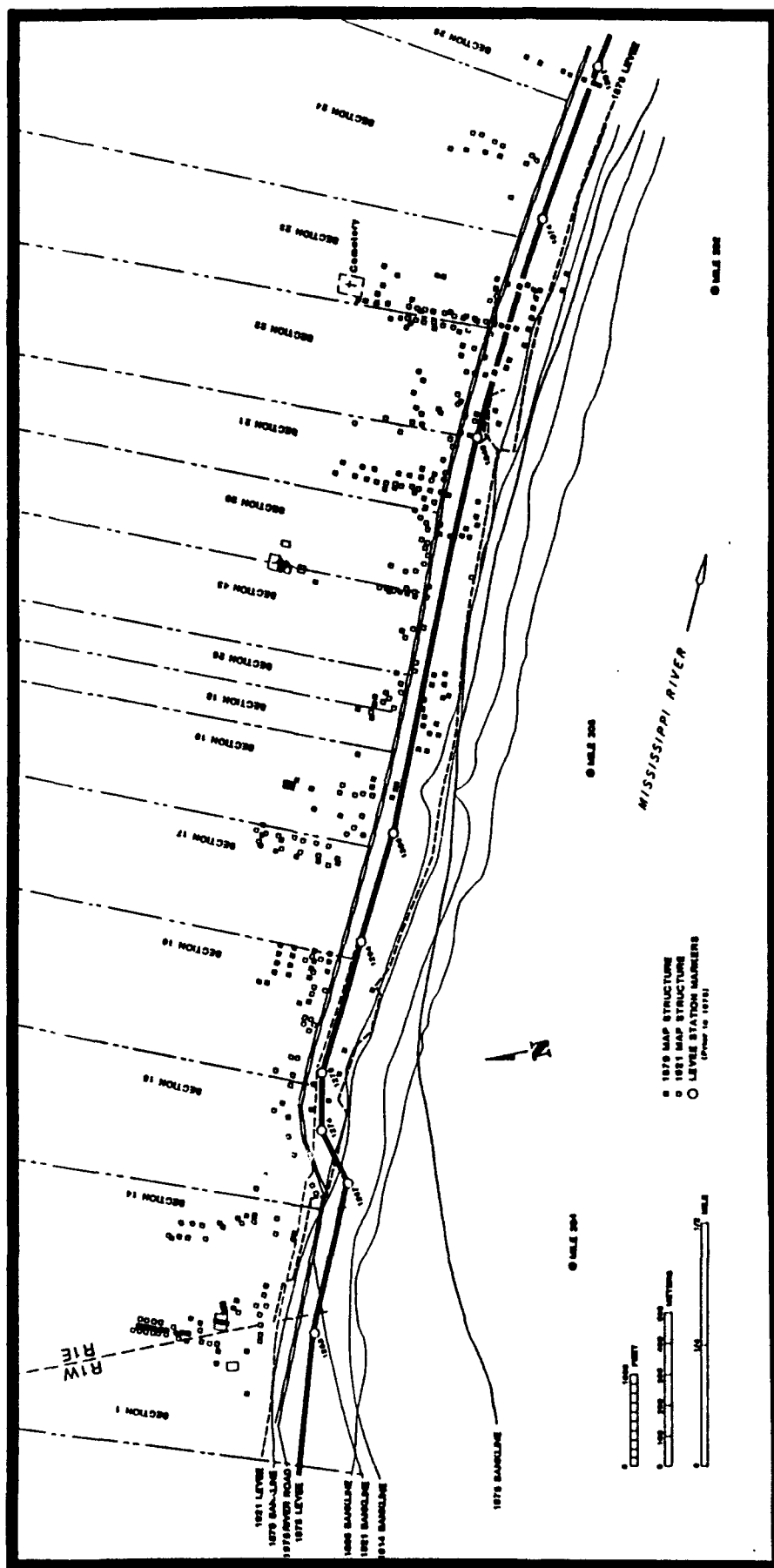


Figure 5. Composite maps drawn from the 1876 - 1893 and 1921 Mississippi River Commission Charts 67 and 68; ca 1930s - 1940s Caving Bank Survey Maps; Mississippi River Hydrographic Survey Charts 31 - 34; and, the USGS 7.5' Series of Plaquemine and St. Gabriel (1963, photorevised 1971 and 1980). Also White Castle and Carville (1974), Louisiana quadrangle maps, River Miles 204 - 202 east (left) descending bank.

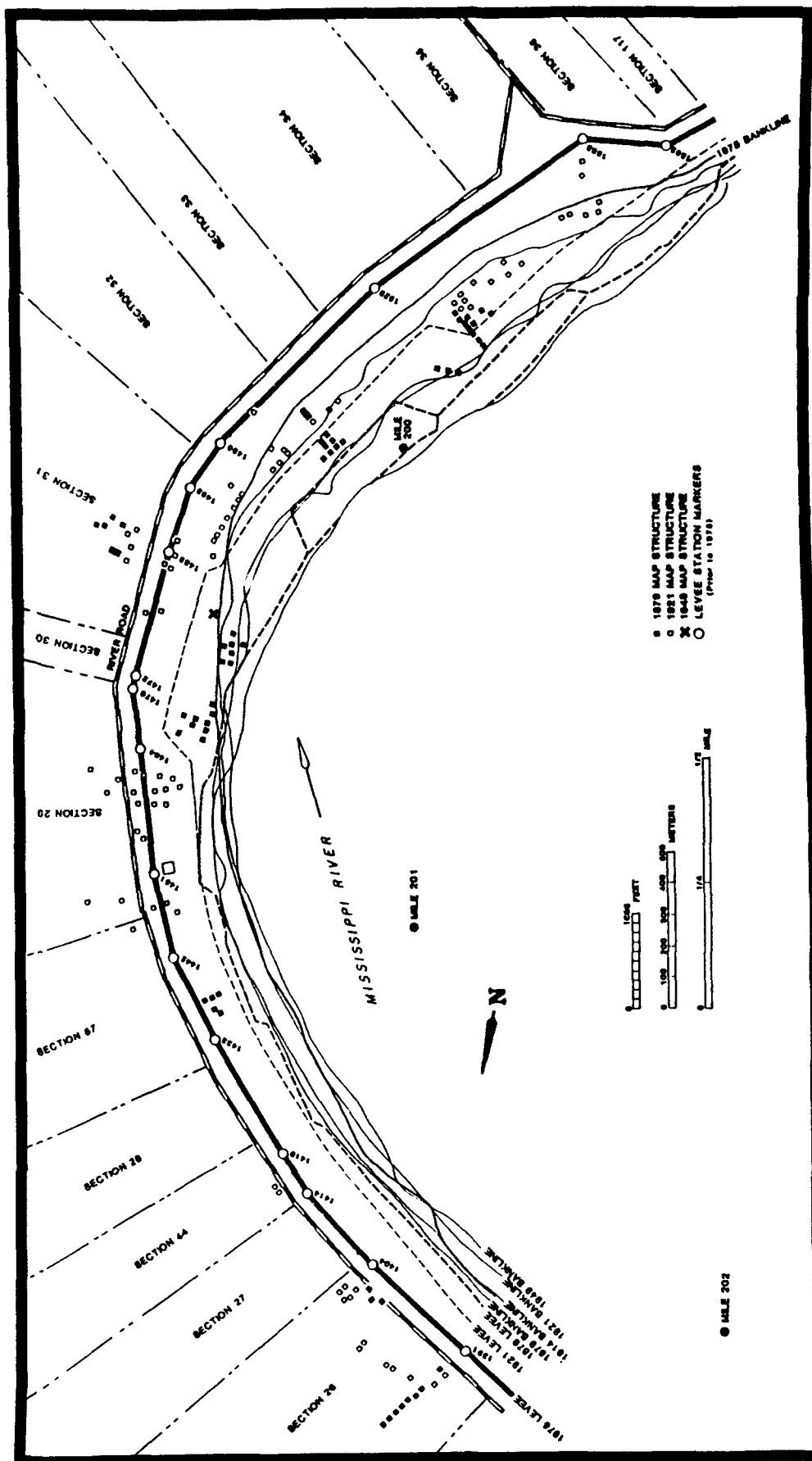


Figure 6. Composite maps drawn from the 1876 - 1893 and 1921 Mississippi River Commission Charts 67 and 68; ca 1930s - 1940s Caving Bank Survey Maps; Mississippi River Hydrographic Survey Charts 31 - 34; and, the USGS 7.5' Series of Plaquemine and St. Gabriel (1963, photorevised 1971 and 1980). Also White Castle and Carville (1974), Louisiana quadrangle maps, River Miles 202 - 199 east (left) descending bank.

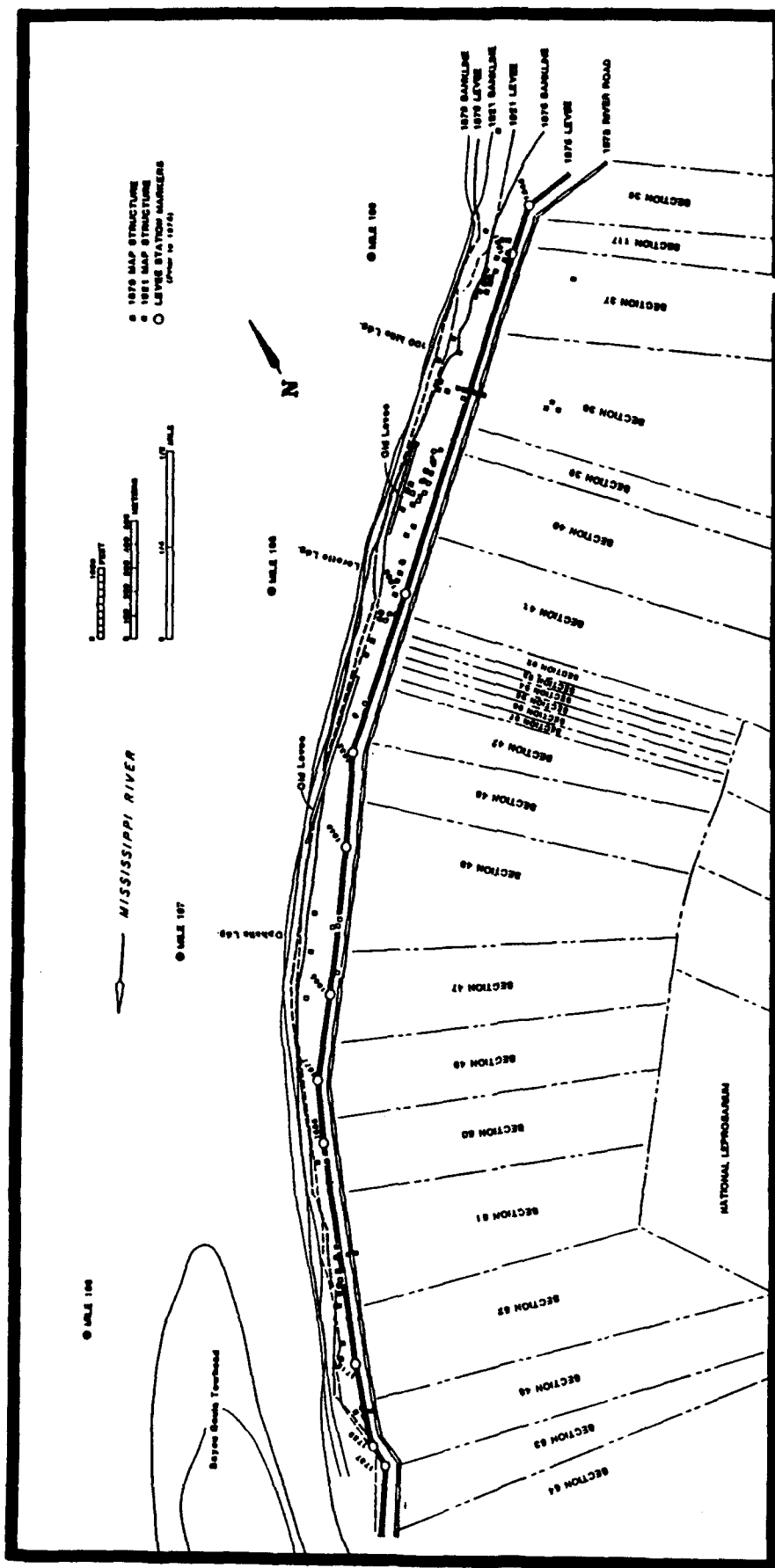


Figure 7. Composite maps drawn from the 1876 - 1893 and 1921 Mississippi River Commission Charts 67 and 68; ca 1930s - 1940s Caving Bank Survey Maps; Mississippi River Hydrographic Survey Charts 31 - 34; and, the USGS 7.5' Series of Pleaquemine and St. Gabriel (1963, photorevised 1971 and 1980). Also White Castle and Carville (1974), Louisiana quadrangle maps, River Miles 199 - 195.5 east (left) descending bank.

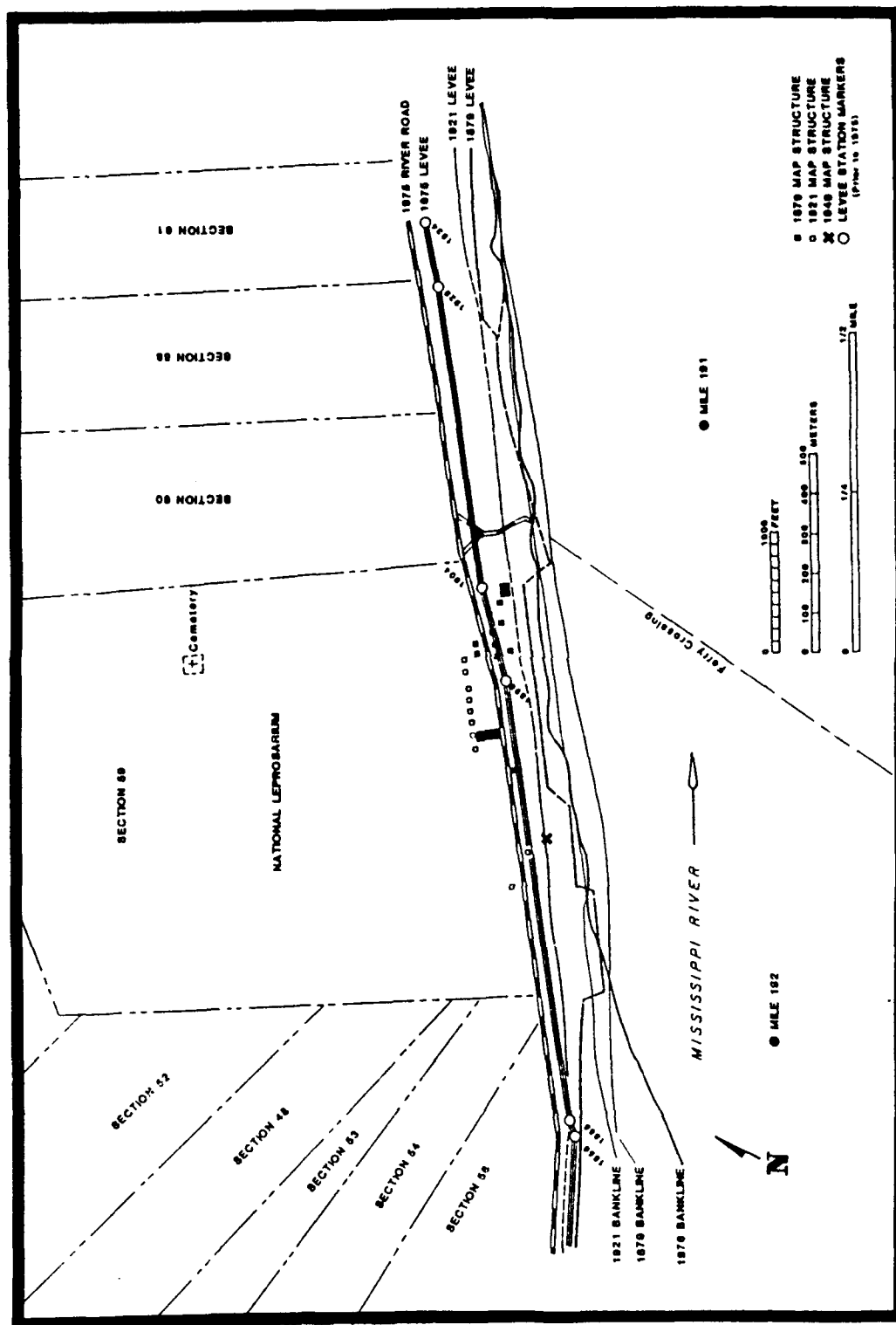


Figure 8. Composite maps drawn from the 1876 - 1893 and 1921 Mississippi River Commission Charts 67 and 68; ca 1930s - 1940s Caving Bank Survey Maps; Mississippi River Hydrographic Survey Charts 31 - 34; and, the USGS 7.5' Series of Plaquemine and St. Gabriel (1963, photorevised 1971 and 1980). Also White Castle and Carville (1974), Louisiana quadrangle maps, River Miles 192 - 191 east (left) descending bank.

Table 2. Generalized Geomorphic Conditions along the Batture within the St. Gabriel Revetment and Levee Enlargement Project Areas on the Left Descending Bank of the Mississippi River (River Miles 204.0 - 191.0).

RIVER MILES	BANKLINE CONDITION			CULTURAL RESOURCE POTENTIAL		
	AGGRADING	CUTTING	STABLE	STRUCTURAL	1876	1921
204.0 - 203.0	X					
203.0 - 202.0	X					
202.0 - 201.0			X			
201.0 - 200.7			X			
200.7 - 200.0		X			X	X
200.0 - 199.0		X				X
199.0 - 198.0		X			X	X
198.0 - 197.0		X				X
197.0 - 196.0		X				X
196.0 - 195.0	X					
195.0 - 194.0	X					
194.0 - 193.5	X					
193.5 - 193.2		X				X
193.2 - 193.0	X					
193.0 - 192.0	X					
192.0 - 191.5			X			
191.5 - 191.2		X				X (unlikely)
191.2 - 191.0			X			

resources potential is low. Stable banklines, also reasonably good areas for site preservation, failed to yield any evidence of historic resources.

The River, Levees, and the Reaches

The following is a brief description of the history of the bankline and levee system along the east (left descending) bank of the Mississippi River over the past century, within the batture areas designated for survey (RM 204.0 to 203.2, 202.5 to 202.2, 198.6 to 196.0, and 191.9 to 191.0).

From RM 204.0 to 203.2 (Figure 5), there have been various periods of erosion and deposition over the last century. From 1866 to 1876, the bankline eroded approximately 200 m. By 1876, the levee was nearly inundated between present day Levee Stations 1279+97 and 1294+57. This situation was reversed between 1876 and 1914; deposition of about 125 m of sediments increased the size of the batture. The threat to the levee in 1876 was clear, and in 1921 the levee had been pushed back as much as 100 m from where it previously stood. Between 1914 and 1921, the river once again began eroding the bankline. The levee of 1876 was largely inundated. The present levee between RM 203.2 and 203.6 is located in its original 1921 location. The present levee between 203.6 and 204.0 is located about 60 m forward both of the levee of 1876 and of the levee of 1921. Due to lateral accretion along the batture, as much as 400 m has been deposited (at RM 204) since 1921. This expansion has enlarged the width of the batture 300 m more than originally was recorded in 1866.

The second reach is located between RM 202.5 and 202.2 (Figure 6). This reach is 2 mi downriver of Granada Crossing, and about one and a half miles upriver from Point Pleasant (opposite St. Gabriel). The river has had different trends of both erosion and deposition through time. From 1866 to 1876, the river decreased batture width by 170 m. This erosion threatened the levee in 1876, but the levee was not destroyed. From 1876 to 1914, the river deposited sediments on the batture which increased batture width by approximately 60 meters. Between 1914 and 1921, the batture eroded 140 m. By 1921, the levee had been setback 100 m, and the inundation of the 1876 levee occurred without incident in 1921. Since 1921, the river has been aggrading, and the batture has increased in width about 60 m. Presently, the levee exists in its 1921 location.

The third reach of the river that was surveyed is located from RM 198.6 to 196.0 (Figure 7). This bankline is slightly convex in shape, which normally would indicate an aggrading or stable bankline associated with a point bar. However, since 1921 the width of the batture has eroded between 40 and 50 meters along much of this stretch. From 1876 to 1921, the river remained fairly stable and only minor levee setbacks occurred between RM 198.6 and 197.8 during the 1920s. The present levee is setback 50 - 100 m landward between RM 196.0 and 196.8 and between RM 196.8 to 197.5 and 198.2 to 198.6 from the levee position recorded in 1876 and 1921. The landward setback of the present levee created enough area on the batture for borrowing. There are four borrow pits found on this reach of the east bank; they are located between RM 198.6 and 198.3, 198.25 and 197.7, 197.6 and 197.2, and from 197.0 to beyond the survey area, which terminates at RM 196.0.

From RM 191.9 to 191.0 (Figure 8), the river flows through a reach just downriver from Point Clair. There are three river processes occurring on this reach: lateral accretion, erosion, and relative stability. At RM 191.9, the batture has been expanding due to the deposition of materials associated with the lateral accretion occurring at the point bar named Point Clair. At 191.9, the thirty or so meters that eroded from the bankline between 1876 and 1921 have been replaced and the batture has increased approximately 20 m in width since 1921. This change from erosion to deposition resulted from the shifting of sedimentation extending downriver from Point Clair. The 1876 levee at 191.9 was setback approximately 130 m by 1921. The present levee is located between 10 and 30 m landward of the 1921 levee. From RM 191.8 to 191.2, the river has followed a general trend of erosion. From 1876 to 1921, the river bankline has decreased in

width by about 90 m; the levee of 1876 was inundated in sections (i.e., at 191.8 and 191.2). The levee had been setback landward between 30 and 120 m by 1921 (the discrepancy in setback is due to the unusual configuration of the levee which existed in 1876; the levee of 1921 and the present levee have a more streamlined appearance). From 1921 to present, the river eroded the batture between RM 191.6 and 191.3, washing away approximately 15 to 20 m. The present levee is located just landward of the 1921 levee between 10 and 30 m. From RM 191.2 to 191.0, the river has remained relatively stable. The levee at this section of the river was setback twice since 1876; by 1921, the levee had been setback about 90 m, and the present levee, between RM 191.2 and 191.0, has been setback another 50 m.

CHAPTER IV

HISTORICAL PERSPECTIVE

Introduction

This chapter presents a general historic overview of the entire project area. Regional settlement and land use trends will be discussed here, rather than specific plantation chronicles. The land tenure histories of the individual plantations within the project area may be found in Chapter VI of this report.

Early Exploration and Initial Settlement

Hernando de Soto, the Spanish explorer, was the first European to view the Mississippi River, when he discovered it in 1541. De Soto's men traveled through the area later to be called Louisiana, and reached the Gulf of Mexico in 1543. More than a century passed before another European set out to explore the Mississippi. In 1682, Robert Caveller de LaSalle sailed down the river to its mouth and claimed all the land for the King of France, naming it Louisiana in his honor.

The first extensive exploration of the Louisiana territory was begun in 1698 by Pierre LeMoyne, Sieur d'Iberville. The main purpose of Iberville's "Mississippi Expedition" was to keep the British out of the Gulf of Mexico (Riffel 1985:2). The Spanish had established a settlement at Pensacola in 1697, and the French government feared an expansion of British colonial interests into the Gulf region. Iberville sought to establish alliances between the French and the Indians along the river, to serve as a bulwark against other European intrusions.

Iberville and his brother, Jean Baptiste LeMoyne, Sieur de Bienville, began their upriver voyage in 1699. They entered the mouth of the river from the open sea in two small boats. After a six-week journey, Iberville arrived in the vicinity of what later would be called Iberville Parish, in his honor. On the east bank of the river, he encountered the villages of the Bayougoula and the Houma (or Ouma) Indians. Iberville noted that the Houma tribe was better off than their neighbors, the Bayougoula; the former lived in a neatly ordered village of some 140 huts, with a population of 350 men in addition to women and numerous children. Of the Bayougoula, Iberville observed:

In this village there were 107 huts and 2 temples; and there were possibly about 200 to 250 men and few women and children. The smallpox, which they still had in the village, had killed one-fourth of the people...These Indians are the most beggarly I have yet seen, having no conveniences in their huts and engaging in no work (McWilliams 1981:63).

Due to its involvement with European conflicts and concerns, France paid only slight attention to its young colony in Louisiana. As a result, there was little assistance available for her colonists in the early eighteenth century. The historian Alcee Fortier commented:

Most of the early settlers had come to America imbued with the idea that it was a land of vast wealth, which was easily to be obtained, and they spent their time in vain search for mines or pearl fisheries instead of opening up plantations (Fortier 1914:303).

In the winter of 1710, supplies were so scarce that the colonists were sent to live among the neighboring Indian tribes in order to survive.

To lessen the economic burden of managing the colony, the French government decided to entrust the administration and development of the colony to private hands (Riffel 1985:4). The first such concession was granted to Antoine Crozat in 1712. Crozat's Company of Louisiana was given a full monopoly over production and export from the colony, as well as mineral rights to the land. Unfortunately, the lure of gold led Crozat on the same fruitless search as his predecessors, while agriculture and trade remained underdeveloped. After only five years had elapsed from his fifteen year concession, Crozat's losses seemed insurmountable, and he surrendered his charter in 1717.

Later that same year, John Law's Company of the West was granted the charter for Louisiana. Law understood that profits could not be realized from a colony with such a population shortage; to attract settlers to the territory, Law offered tracts of land to men who would establish agricultural settlements in the struggling colony. One of these grants, known as the Paris Duvernay Concession, "was located at the ancient village of the Bayougoula [sic] Indians on the west bank of the river" (Riffel 1985:4). An inventory conducted in 1726 (Pritchard 1938:979-994) showed that the settlement was of "4 square leagues containing about seventy arpents cleared and which are at present planted in rice, potatoes, etc." Although it was beset by administrative problems, the Paris Duvernay Concession represented a successful early attempt at upriver settlement.

The European wars of the mid-eighteenth century, which culminated in the Seven Years' War (1756-63), proved disastrous for France. Financially and militarily unable to support the colony any longer, France ceded Louisiana to Spain in 1762 in the secret Treaty of Fontainebleau. It was not until 1766, however, that a Spanish governor, Don Antonio Ulloa, arrived in Louisiana to begin the Spanish administration of the territory.

The Acadians

In the summer of 1767, a group of 200 Acadians, refugees from the British occupation of Nova Scotia (Acadia), arrived in New Orleans. The Spanish government, recognizing the need for settlers to cultivate the land in order to establish a strong economic base in Louisiana, welcomed the Acadians to the colony. Governor Ulloa selected St. Gabriel, on the east bank of the Mississippi River in what was to become Iberville Parish, as the site for the Acadian settlement. The settlers were equipped with tools, weapons, medicine, supplies, and food to tide them over until the first harvest on their new land.

In his decree of August 6, 1767, Ulloa established the guidelines for the allocation of land to the Acadians.

These people are to be located down river from the fort of St. Gabriel in Iberville in the direction of New Orleans, settling the shore of the river that extends toward the capital, and it is to be accomplished in the following way ... A stretch of land measuring no more than three thousand yards along the shore of the river downward from the fort of St. Gabriel shall be left vacant so that the Spaniards...who in the future shall come with a job or occupation and shall want to establish themselves there may settle on it ... From the place where the above mentioned distance reserved for Spaniards ends will begin the lands that are to be distributed to the Acadians, the first settlers of that shore (Chandler 1973:74).

Ulloa demonstrated great concern for the Acadians, expressing his desire that "the first settlers of that shore" be given every chance to succeed and prosper in Iberville Parish.

Development Under the Spanish

The change in ownership of the colony was not well-received by all of the colonists, and Ulloa's term in office was marked by internal dissension and by outright rebellion. In 1769, Don Alexandro O'Reilly and a small fleet arrived in New Orleans to establish firmer Spanish control over the Louisiana colony (Fortier 1914:524).

During the late eighteenth century, the Spanish government granted land patents to settlers in the colony. Despite the increase in population, the Spanish never were able to create an economically self-sufficient colony in Louisiana. Much of the farming was on small-scale subsistence plots, with little or no marketable production. Indigo was introduced to Louisiana in 1728, and it became the major commercial crop of the territory. With the closing of French ports to Louisiana products in 1768, the industry received a major setback (Fortier 1914:562). By the end of the eighteenth century, a severe insect blight, coupled with cheaper prices in the Far East, brought about the end of Louisiana indigo production.

By the end of the eighteenth century, Spain no longer could afford to support the struggling Louisiana colony and ceded the territory back to France in 1800, with the secret Treaty of San Ildefonso. France then sold the colony to the United States in 1803.

The Louisiana Purchase and Antebellum Development

The U. S. Congress created a territorial government in 1804 and William C. C. Claiborne, the first American governor, arrived in New Orleans in 1805. In 1807, after an unsuccessful experiment in forming counties as administrative units, the legislature divided the state into 19 parishes, to serve as the basis for local government.

Shortly after the acquisition of Louisiana, the United States government recognized the need for territorial surveys and legal ratification of land ownership in the region. Local landowners were required to register formal claims; legal ownership was based on proof of French or Spanish grants, patents, concessions, and orders of survey. If records were not available, proof of ten years habitation and cultivation of the plot prior to 1803 was acceptable (Lowrie and Franklin 1834).

In Iberville Parish, Spanish Patents were usually the basis for United States land grants, which were issued after the Louisiana Purchase in 1803. The procedure for obtaining a Spanish patent was as follows:

Lands were obtained with little difficulty or expense. The immigrant made his selection of any unoccupied parcel, and presented a written request for an order of survey. If no obstacle intervened, the governor issued the order, and on return of the plat and payment of very moderate fees for surveying, the grant issued (Fortier 1914:36).

Economic success, absent under the French and Spanish governments, finally would be achieved by Louisianians as citizens of the United States. In 1795, Etienne de Bore successfully granulated sugar from sugar cane and sparked the growth of what would become Louisiana's major industry. Because of this development, along with the invention of the cotton gin, sugar cane and cotton cultivation rapidly

became very profitable enterprises in Louisiana. With the acquisition of the territory by the United States in 1803, Americans from the north began trekking southward to try their luck as planters:

Rich and poor, slaveholder and nonslaveholder, large planter and small farmer ... all poured into this rapidly developing region. Among the newcomers were planters with the capital necessary to undertake sugar culture and the initiative and imagination to foresee the possibilities of the development of the new industry (Sitterson 1953:23).

Changes in land use and distribution occurred very quickly. Substantial capital was required for sugar mills, protective levees, and slaves. Small farmers and landowners increasingly sold their holdings to large plantation owners and wealthy speculators (White 1944:352). When a small farm was offered for sale on the owner's death, the high valuation of the land kept prices above the reach of the small farmers (Sitterson 1953:48). Under the United States administration, backlands were offered for sale, enabling landowners to add an additional forty arpents of land to the rear of their holdings. Furthermore, cane cultivation was only profitable on a large scale, requiring large land holdings and investments that could exceed \$200,000.00 (Taylor 1976:65). These factors all tended to establish a pattern of small farms being consolidated into larger plantations.

Cotton also was an important crop for southern Louisiana farmers, but the introduction of the heartier "Ribbon Cane" sugar in 1817, together with a drop in cotton prices and several disastrous cotton seasons, caused a widespread shift to sugar production in the 1830s and 1840s. In the River Parishes below Baton Rouge, including "Sweet Iberville" (*South Louisiana Salute* 1949:1), sugar planting became the dominant, almost universal, industry, during the antebellum period.

The Civil War and Postbellum Economic Development

The Civil War devastated the prosperous region containing Iberville Parish. The value of property in Iberville Parish on the eve of Civil War was assessed at approximately \$14,000,000.00. At that time, 33,000 acres were planted in cane, 22,000 acres were planted in corn, and 1,500 acres were planted in cotton. The white population of the parish was approximately 5,600; the slave population was approximately 10,000. Only 200 free men of color resided in the parish (Pritchard 1938:1129).

After New Orleans fell to Federal troops in 1862, Union gunboats ascended the Mississippi River. They shelled and occupied the town of Plaquemine on the west bank of the river in Iberville Parish. Union forces then confiscated Holy Cross Academy for their headquarters, and began to build a fortification below Fortville. Although skirmishes in the parish were infrequent, Union troops often confiscated the movable possessions of the local residents (Grace 1946:125).

Louisiana's slave-based sugar industry was thrown into turmoil by the war. Prices fell, credit was tight, and it was nearly impossible to keep slaves on the plantations (Begnaud 1980:38-39; Goodwin and Yakubik 1982). As a result of these financial difficulties, many planters lost their estates. After the war, the industry was slow to recover from the disruption it had suffered. A pervasive lack of capital impeded the revitalization of the industry. Planters could not afford to rebuild their sugar houses, nor could they repair the levees that had been neglected during the war years. Without the proper levees, many former sugar plantations were inundated during high water. Bouchereau noted some of the causes that prevented capital investment in sugar cane:

Changes in labor systems, bad politics and government, and fear that the (sugar) tariff would be abolished or greatly modified, preventing capital from being invested . . . (A. Bouchereau 1889-1890:53a).

The loss of slave labor further encumbered economic recovery. Many former slaves migrated north, and those who stayed were regarded as unreliable; they were perceived by the white population as a political threat. L. Bouchereau noted that "not more than two out of every twenty sugar planters have a full complement of laborers" (1868-1869:viii).

These fundamental obstacles necessitated great changes in the sugar industry. Since most planters lacked both the capital and the laborers to manufacture sugar, a new method was proposed by Bouchereau in 1874; he urged that the agricultural and industrial aspects of sugar production be separated. His proposal, the "Central Factory System," included centralized mills to serve the needs of many planters:

Let the sugar factories be established in different neighborhoods and let the producers of the cane sell it to the factory (Bouchereau and Bouchereau 1874:xii-xiii).

In this way, the increased labor costs could be absorbed by the savings on mill processing and manufacturing. This system also allowed smaller farmers to participate in sugar cane cultivation; impoverished farmers were able to grow small tracts of sugar cane to sell to the factory. Under the antebellum plantation system, small-scale production had been an economic impossibility.

Rice cultivation became a viable alternative to the high cost of sugar cane production for many planters. In 1877, Bouchereau wrote:

Many of the sugar plantations are planted in rice for want of the necessary means to rebuild or repair sugar houses, etc., while others are only partially cultivated owing to the encroachment of water from crevasses, and many are completely abandoned on account of overflow (Bouchereau and Bouchereau 1877-1878:XX).

Rice was a more appropriate crop for the neglected postbellum plantations since inundation, although harmful to the growth of sugar cane, was necessary for rice cultivation. Rice agriculture also was much less labor-intensive than sugar cane cultivation, an added incentive to planters facing a labor shortage. The reconstruction period cultivation of rice in the River Parishes is discussed in more detail elsewhere (Goodwin, Wojtala et al. 1988).

By the end of the nineteenth century, sugar had regained its prominence as an agricultural staple, particularly in the River Parishes. The Central Factory System caught on and was quite successful; in 1893, Bouchereau remarked:

Gradually the cultivation of cane and manufacture of sugar from it are becoming separate and distinct industries. Men of means invest their capital in equipping first-class factories furnished with all the modern improvements that the genius of the inventor has produced; small planters pursue the cultivation on the general lines More sugar is now produced per acre than ever before (Bouchereau and Bouchereau 1893-94).

In Iberville Parish, some planters turned to rice to supplement their sugar crop, while a few switched exclusively to rice production. Sugar, however, remained the most important industry in the parish.

Twentieth Century Development

Sugar production expanded on the East Bank of Iberville Parish during the early twentieth century. By 1945, sugar cane accounted for over fifty per cent of all the cultivated land in the parish. Conversely, rice production in the parish dwindled significantly; by 1945, only 2,000 acres of land were devoted to rice cultivation, as opposed to the 26,000 acres that were planted in cane (Iberville Parish Planning Board 1945:19-20).

Early in the century, increased quantities of corn, fruit, and pecans were produced in the parish. Cotton, grown during the early 1900s, had all but disappeared by 1940. Soybeans, initially planted with corn to replenish the soil, also became an important cash crop. Livestock breeding increased during the 1930s and 1940s; abandoned rice fields provided good pasture lands. By the 1960s, cattle production was second to sugar cane as a source of farm income (Iberville Parish Development Board 1964). Agriculture was the main occupation of Iberville Parish residents, and it employed over one-half of the work force.

Although several large refineries and chemical plants have come to the parish in recent years, sugar manufacture remains the dominant industry. On the east bank of the Mississippi River, however, this industry is minimal; in 1945, only one syrup mill existed in the project area, in the town of Sunshine, Louisiana (Louisiana State University College of Commerce 1949:4.06). Although the "East Bank" retains its primarily rural character and economy to this day, plans are already underway to change the local landscape. Land within the project area is now planted by absentee farmers who lease acreage from chemical and petroleum companies that undoubtedly one day will build plants on their properties (Iberville Parish Map, Tax Assessor's Office, Plaquemine).

Economic Analysis and Settlement Trajectory

Figure 9 represents a comparison of sugar production totals in the project area for the years 1844 to 1917 with production totals from the entire state of Louisiana for the same period. Sugar production in the project area should closely parallel state production; reasons for deviation between the two figures may include natural disasters, technological developments, or economic shifts that affected project area or state production in a given year.

Between the years 1844 and 1862, sugar production in the St. Gabriel reach, on the east bank of the river in Iberville Parish, followed the same general curve as the state. During these years, Iberville was the second most productive sugar parish in Louisiana. Several natural disasters during these years damaged much of the sugar cane statewide but did not affect production in Iberville Parish. These catastrophes included a killing frost in November 1855, and a series of crevasses in 1859 that flooded all the land between Bayou Lafourche and the Mississippi River, inundating the Lafourche interior and St. Charles, St. John the Baptist, St. James, Assumption, and Ascension parishes.

By 1869, sugar production statewide had plummeted to less than 15 per cent of the 1862 production totals. This drop occurred in the St. Gabriel project area, as well. Production trends for the reach closely parallel those of the state through 1889, as production steadily rose with economic improvements in and protection of the industry.

During the postbellum period, many sugar planters switched to rice cultivation, because sugar was too expensive and too labor-intensive to grow profitably. As Figure 10 indicates, rice production in the

SUGAR PRODUCTION 1844-1917
State: 10M/St. Gabriel: 1M

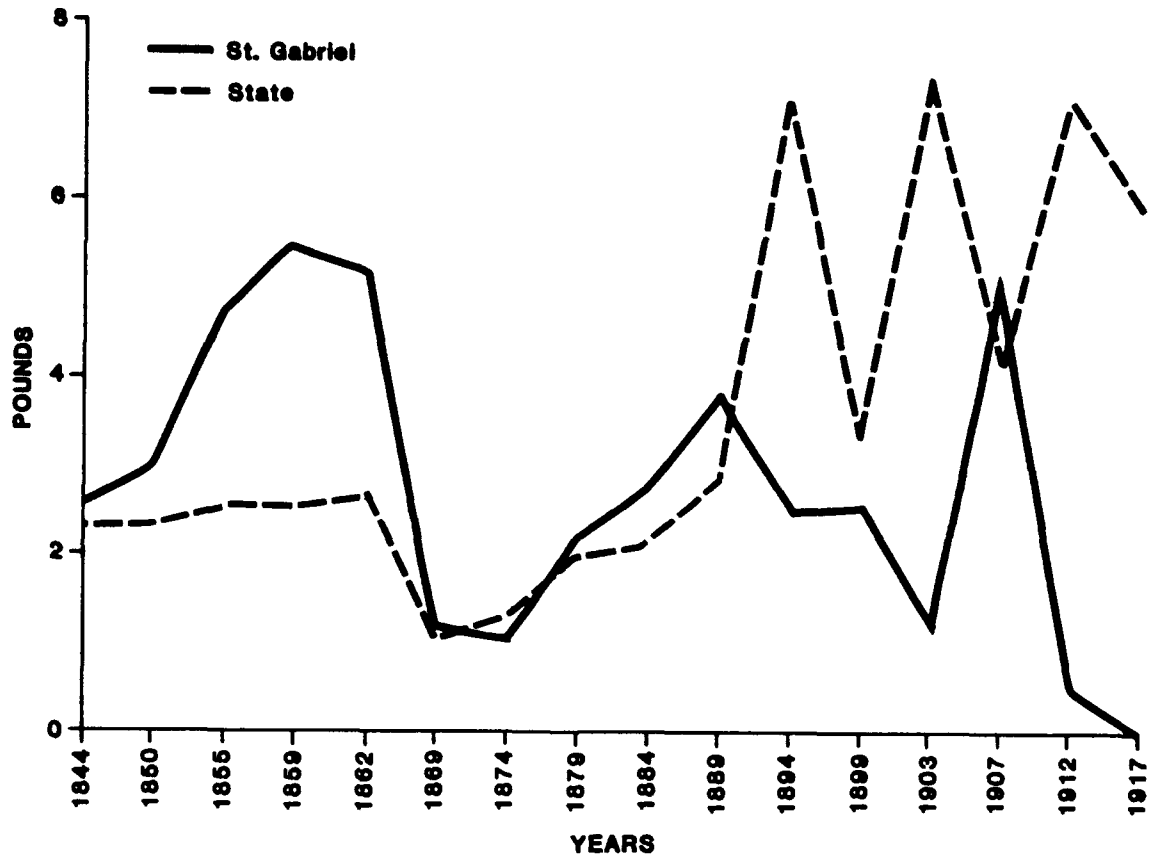


Figure 9. Sugar production in the project area between 1844 - 1917.

RICE PRODUCTION 1879-1889
State: 10M/St. Gabriel 1M

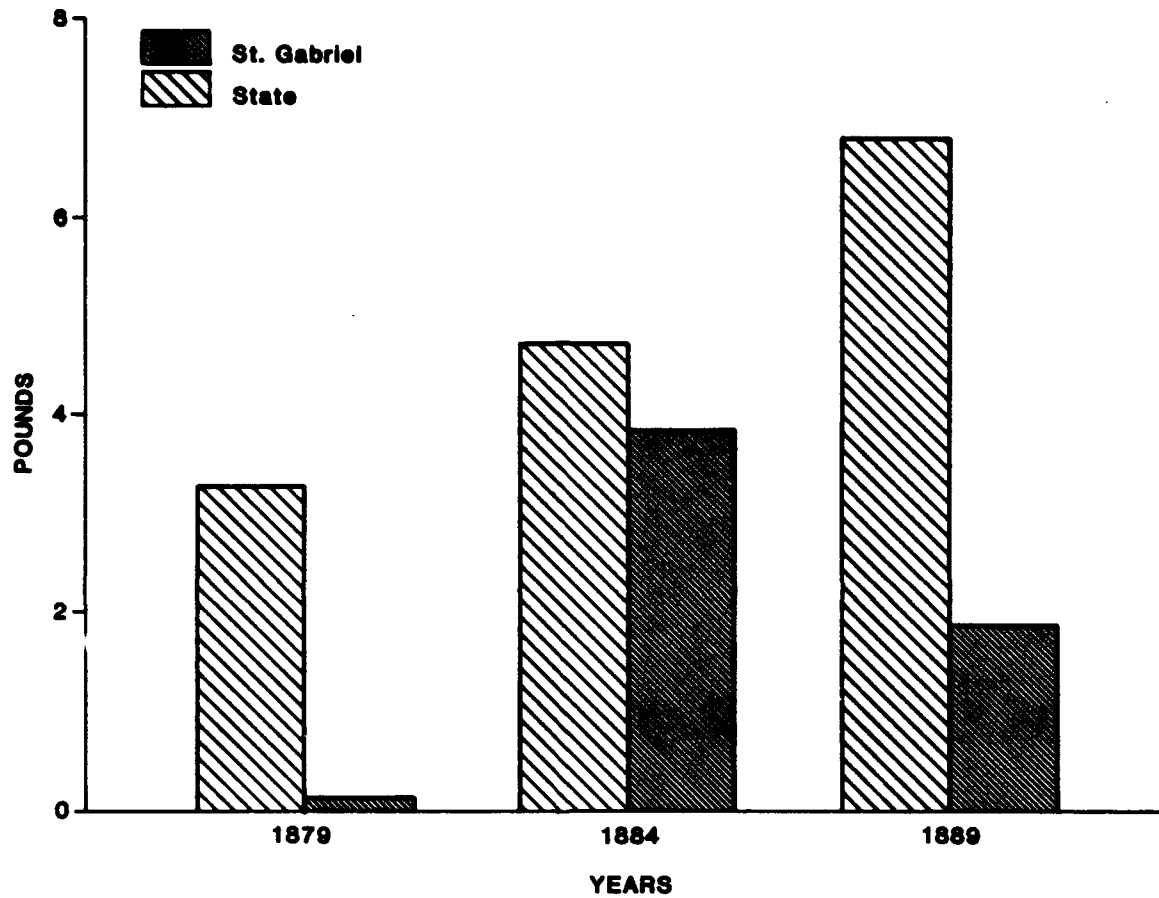


Figure 10. Rice production in the project area between 1879 - 1889.

project area never reached the levels achieved elsewhere in the state. While rice cultivation continued to expand in Louisiana through the 1880s and 1890s statewide, production in the St. Gabriel area began to drop significantly during the late 1880s (Ginn 1940). This may have been due to a more rapid economic recovery by planters in this area, which enabled them to return to sugar cultivation at an earlier date, as well as to a strong tradition of sugar agriculture in "Sweet Iberville" Parish, which muted the appeal of rice planting.

Beginning in the late 1890s and continuing into the twentieth century, production records from the project area show a steady decline in reported sugar production. Though the Louisiana sugar industry had entered a period of tremendous decline due to falling prices coupled with the lowering of protective tariffs, it did experience peak years in 1912 and 1917. Production in the St. Gabriel reach during these years, according to reported production, did not keep pace with the surge in production statewide.

This trend can be understood by considering the technological changes that occurred throughout the postbellum period. As has been discussed, the Central Factory System that became popular in the 1890s led to a separation of cultivation and manufacture of sugar cane. Planters began selling their produce to large centralized factories for processing. On the East Bank of Iberville Parish, records show that as the years passed, a smaller number of planters reported a larger amount of sugar production. This trend suggests that smaller planters in the reach were selling their harvests to larger plantations for processing. Although this system was not as profitable for the individual farmer, it enabled him to cultivate the crop of his choice with a profit margin that allowed him to retain ownership of his land. Despite the ability of the owner of a small holding to benefit from the Central Factory System, the pattern of land consolidation that began in the antebellum period continued in the sugar producing region of Louisiana during the postbellum years.

Summary of Significant Themes

Historical research pertaining to the St. Gabriel project area on the east bank of the Mississippi River in Iberville Parish has revealed certain significant themes in the regional history that also are essential to understanding historic archeological remains in that area. These themes include: the initial Acadian settlement of the eighteenth century and the lifestyle of subsistence farming established there; antebellum economic development, which saw the rise of sugar planting throughout the state and in the St. Gabriel area; and the consolidation of small farms into large plantations, due to the exigencies of sugar cultivation.

Although there is a virtual absence of historical and archeological data relating to the antebellum lumber industry, fragmentary evidence exists that lumbering occurred on a scale beyond the mere clearing of fields on the opposite bank of the Mississippi River (Grace 1946:90). In all likelihood, similar operations occurred within the project area.

Themes relevant to the postbellum period include the movement towards rice cultivation; the shift back to sugar during the late nineteenth century; and, the gradual trend towards centralized sugar manufacture, which led to the eventual elimination of sugar processing in the project area. This centralization enabled small farmers to stay in business and, consequently, brought about some reversal of the trend towards consolidated land holdings.

Consolidation, however, was the dominant land use pattern in the sugar-producing areas of Louisiana. Iberville remains one of the foremost sugar producing parishes in Louisiana. Agriculture has dominated the economy of the parish since its initial settlement, and sugar has been the dominant crop for more than 150 years. Although on the verge of developing, chemical plant and industrial activity in the project area are still on the drawing board. It does not appear that agriculture, led by sugar cultivation, will lose its place of preeminence in the economy of the project area in the near future.

Expectations and Predictions

Acadians and Subsistence Farming

Shortly after arriving in the colony, Spanish Governor Don Alexandro O'Reilly ordered a general census, which showed that Iberville Parish had a population of 376 in 1769 (Fortier 1914:524). A subsequent census in 1771 noted that the population had dropped to 277 (Kinnaird 1945:196). No agricultural statistics were included with these census figures, but most Acadian settlers in St. James and Ascension Parishes lived on small parcels of land of three to six arpents frontage along the Mississippi River. Hogs were the most common livestock, but the Acadians also kept cattle, horses, and sheep (Voorhies 1973). The economy of the Iberville Acadians probably was similar to their downriver neighbors. C. C. Robin, writing in 1807, described life along the Acadian coast:

Twenty leagues above the city the Acadian coast begins and runs about another twenty up from there. Like the Germans they work their own farms. Only a few of them have negroes. Already the population has risen so that the farms are subdivided into strips of two or three arpents frontage. You must remember that each plot ran back forty arpents from the river. Only about half of that depth, however, is under cultivation, the rest being inundated and covered with cypress and similar swamp vegetation. Rice, corn, several kinds of beans, melon (in season), pumpkin, salted pork and beef make up their principal diet (Landry 1966:114-115).

Acadians continued to arrive during the 1780s; many settled within present day Iberville Parish. A number of families who arrived in 1785 settled along both sides of the Mississippi River near what is now the town of Plaquemines. Arrival of additional Acadian refugees helped boost the population in this area from 673 in 1785, to 944 in 1788 (Martin 1827-29).

In the project area, the eighteenth century Spanish patents were granted primarily to Acadian refugees. All of the reach under investigation is contained within T9S, R1E. In 1775, Spanish Governor Unzaga granted patents in that region corresponding to Section 40 to Francisco Landry; Section 41 to Pedro LeBlanc; Section 45 to Paul Landry; Section 47 to Joseph Landry; and Section 52 to Joseph Comon. Additionally, Section 22 was claimed by Jean Baptiste Babin, and Section 23 was claimed by Paul Babin (Appendix I). All of these names appear on the manifest of Acadian settlers, entitled "Distribution of Lands For the Acadian Families That Have Gone To The Settlement of St. Gabriel," recorded by Governor Ulloa in 1767 (Chandler 1973:80-87). This document offers proof that the first colonial inhabitants of the project area were Acadian refugees; thus, it is probable that an Acadian farmstead was established in each of the aforementioned sections. Moreover, some of the standing structures indicated on the earliest Mississippi River Commission Maps (Figures 5 - 8) could be buildings dating from the period of Acadian settlement.

Antebellum Sugar Cultivation and Lumber Industry

As noted previously, the growth of the sugar industry corresponded with a trend towards consolidation of small farms into large plantations. This pattern of land tenure existed within the project area, most notably in the center and lower thirds of the reach. It is worth reiterating that fewer large-scale plantations were in operation during the antebellum period in the project area than on the opposite (west) bank of the river. In 1816, a geological observer recorded:

In the space from the efflux of the Iberville, to St. Gabriel church, the right shore has a marked superiority over the left in quantity and quality of soil. Most of the best farms in the Parish are on the former bank (Darby 1816:201).

A comparison of antebellum production figures (Champomier 1844-1860) shows that, on the average, the "West Bank" was four to five times more productive than the "East Bank" during these years. This production rate, coupled with the fact that there were fewer than twice as many Iberville Parish planters west of the Mississippi River, suggests that the "East Bank" plantations were substantially smaller than those on the "West Bank" (Goodwin, Gendel et al. 1987).

An additional explanation for this inconsistent settlement pattern and cane production would be greater economic diversification within the project area. An example of this is the Saw Mill plantation purchased, along with timber rights on a neighboring tract, by Elbert and Linn Woodward in March 1829. The Woodwards subsequently sold Saw Mill to Rene Arous, who developed the acreage as a sugar plantation (Norman 1858). An expanded discussion of the land tenure history of Saw Mill Plantation follows in Chapter VI, Site Descriptions and Interpretations, under St. Gabriel Site SG-3 (16IV154). Although the researched parish records did not note the existence of a saw mill on the property, the plantation name coupled with the terms of the Woodward acquisition, suggest that such a structure probably was constructed on the tract prior to the Civil War. Certainly, a lumber mill in this area might be expected based upon extant records regarding the opposite bank of the Mississippi.

The site of a substantial saw mill should be distinguishable by certain characteristics unique to such an operation. Most noticeable of these would be a canal or waterway of some sort that would have facilitated the movement of large cypress and oak logs to the mill. A commercial mill would have used a steam-powered saw. Although it is unlikely that the engine or boiler would have been abandoned on the site, machinery-related artifacts should be found in greater number than on subsistence farms or sugar or rice fields. Some evidence of the foundation for the heavy equipment also might remain and should be distinguishable from similar remains resulting from a sugar mill by the absence of glazed bricks ("clinkers") in the former.

Postbellum Rice Cultivation and the Centralization of Sugar Production

Rice apparently was cultivated as extensively in the project area as it was in other areas of the sugar region following the Civil War. The replacement of cane with rice during the postbellum period can be documented with certainty for the central third of the reach (Goodwin, Wojtala et al. 1988; Bouchereau and Bouchereau 1877-1890). The small farmers throughout the reach undoubtedly cultivated the grain for home consumption, but its popularity as a cash crop faded as the nineteenth century drew to a close. As a local Iberville Parish newspaper attested in 1906,

The staple industry of this parish has always been and most probably will always be the cultivation of cane and the making of sugar, and although planters frequently go from cane to rice, or from cane to cotton, they invariably, after the lapse of a few years, find themselves again laying by big crops of cane (*The Weekly Iberville South* 1906).

Throughout this region, small farmers continued to sell their land to larger plantation owners, until small farms almost disappeared in many areas. Iberville's east bank reached its point of greatest consolidation of land holdings in 1893, when only eleven planters owned land in the project area (Figure 11). After that year, the number of planters in the reach steadily increased; although the sugar reports list these

LAND OWNERS IN THE PROJECT AREA 1844-1917

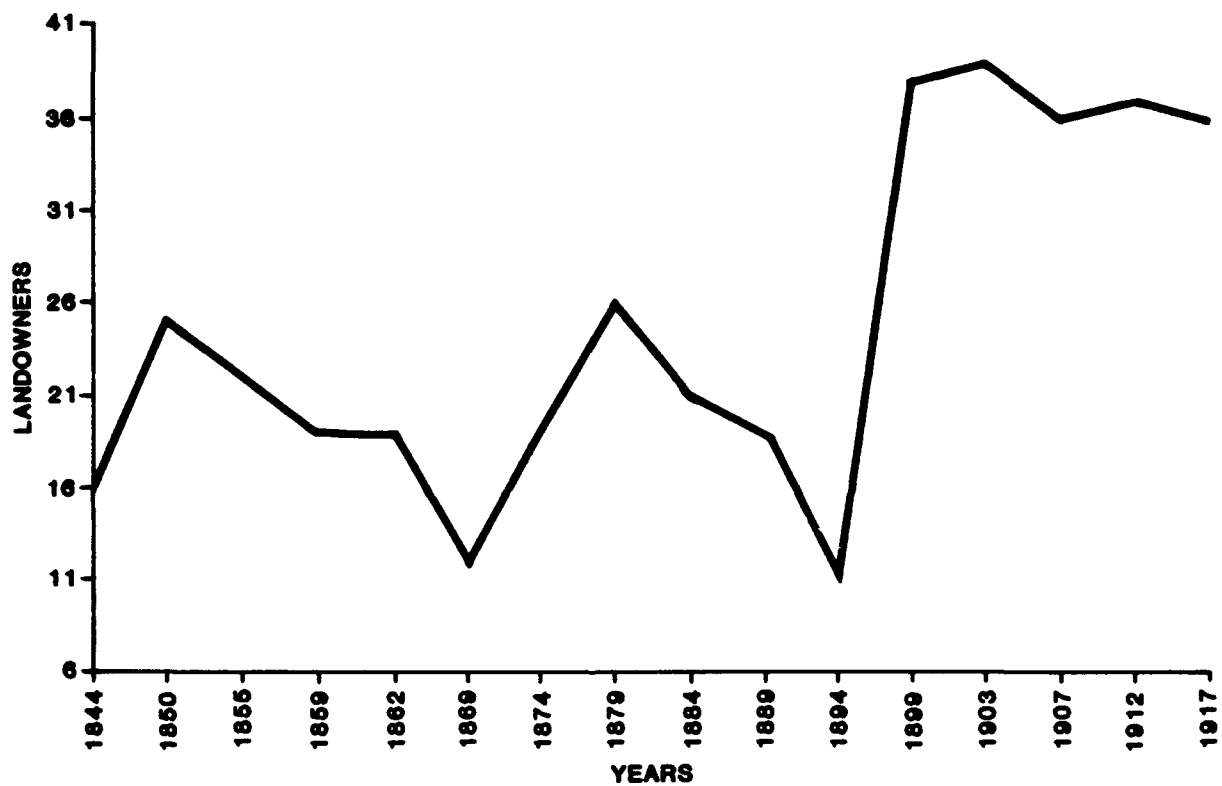


Figure 11. Land owners in the project area between 1844 - 1917.

planters as having no reported production (Figure 9), the fact that their names appear in the reports indicates that they retained ownership of their land. As already suggested, this unusual trend can be attributed to the Central Factory System and to the lack of manufacturing facilities in the project area. Small farmers could grow small harvests and profit by selling these to large processing mills outside of the St. Gabriel reach. Their production, however, was of little economic consequence except to themselves.

In the St. Gabriel area, these large processors were the Granada, Oakley, and Monticello plantations, the only plantations in the reach with the technologically sophisticated vacuum and centrifugal mill apparatus. Granada Plantation was located at the extreme upriver end of the reach; Oakley and Monticello were situated upriver from St. Gabriel. By 1917, when the project area reported zero production, it can be assumed that the St. Gabriel farmers had started selling their production to factories outside of the reach, perhaps on the Iberville Parish "West Bank."

Artifactual and architectural remains associated with sugar production during the past century have been documented elsewhere (Goodwin, Armstrong et al. 1988). Structures associated with both subsistence farming and with monocrop agriculture along the Mississippi River are indicated on numerous maps. These maps, particularly those compiled by the Mississippi River Commission, coupled with a survey of the surface area, should prove to be the most accurate means of locating the sites of postbellum structures (Figure 5 - 8).

CHAPTER V

FIELD METHODS AND SURVEY RESULTS

Pedestrian Survey and Subsurface Testing

During survey, priority was given to three St. Gabriel Levee Enlargement borrow pit locations at RM 202.2, 198.5, and 198.0-L. The New River Bend Revetment segment (191.9 to 191.0-L) and a 1 mi section of the downstream segment of the St. Gabriel Revetment between RM 198.6 and 197.6-L also were given scheduling precedence.

This project was structured to build upon the National Park Service pedestrian survey by introducing a more rigorous survey methodology than that applied by the National Park Service in 1983. The methodology applied during 1988 included surface inspection, systematic shovel testing, and deep testing using a backhoe to locate buried sites. The backhoe was used to test whether structures shown on historic maps had survived extensive borrowing of the batture in the 1920s and 1930s. Backhoe trenching provided immediate large-scale information regarding stratigraphy and the presence or absence of sites in the proposed borrow areas. As indicated above, prior to field work historic maps and the state site files were consulted to ascertain the former locations of standing structures and the locations of previously recorded sites.

The field methodology applied in each survey segment, and observations of each segment are discussed below, from upriver to downriver. Archeological sites discovered during survey are discussed in greater detail in Chapter VI. Initial field work concentrated on surface inspection and on subsurface testing within each project area. This was accomplished by shovel testing in concert with pedestrian transect survey. When sites were found, they were tested to determine the size, depth of deposit, stratigraphy, cultural association, function, approximate date of occupation, and condition. The objectives of this effort were to document the deposition and occupational histories of the site, and to correlate the physical remains with data pertaining to the history of the project area. A sketch map of each site was prepared; these maps identified any visible features, as well as the relationships of the site and its features to surrounding landmarks or modern cultural features (e.g. houses, roads, pipelines, levee markers). At least one datum was established at each site; at larger sites, both primary and secondary datums were emplaced. A series of auger tests radiating from datum were used both to examine the stratigraphy and determine the extent of the site. Shovel tests were used along banklines to supplement the auger tests. Bluff edge profiles were cut, cleaned, and recorded along cutbanks where artifacts were observed. Grid locations of all auger tests, shovel tests, and bluff profiles were recorded on field maps.

River Mile 204.0 to 203.2-L

This segment is located on an aggrading bank. The survey area was divided in half because of the differential degree of deposition that has occurred. The probability of finding sites in the upriver half (between 204.1 and 203.9) was diminished because of heavy deposition and lateral accretion. Historic structures were expected near the modern levee; with this in mind, two transects were shovel tested along the upriver half closest to the riverside levee toe. A walkover of the entire upriver half in linear transects was completed; a modern trash dump and a pipeline were encountered. Eight transects were traversed. The downriver half of this segment (between 203.9 and 203.2) was shovel tested at 50 m intervals, along 8 transects spaced 20 m apart. Transects were oriented at 120 degrees, parallel to the river and to the levee. Spoil banks, drainage ditches, standing water, and a modern dump were encountered along the survey. No prehistoric or historic cultural remains were encountered. This area is heavily wooded with hackberry,

sycamore, oak, and willow. Convent soils were present; as a result of heavy spring rains, much of this area was flooded with 4 to 6 inches of standing water at the time of the survey.

River Mile 202.5 to 202.2-L

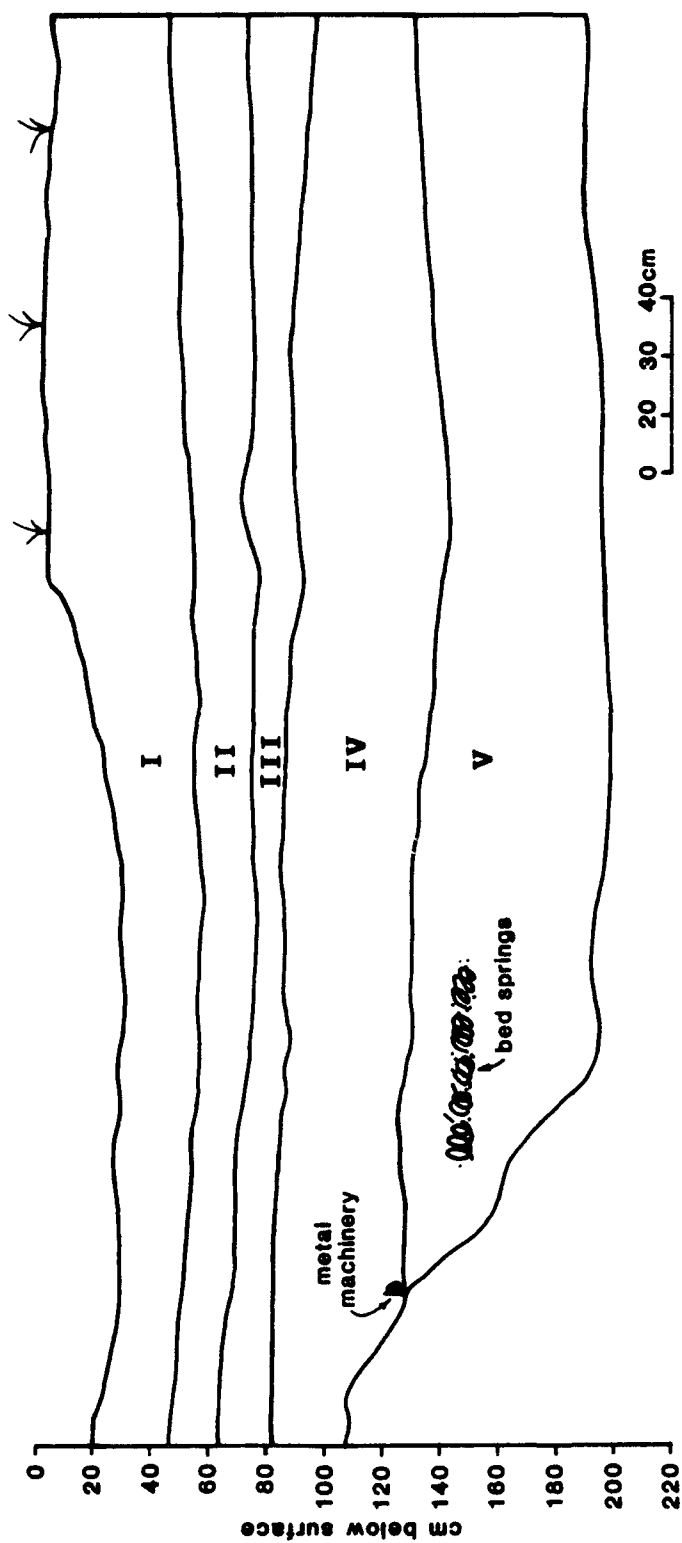
A rectangular borrow pit (580 x 60 m) will be excavated at this location. Survey of this planned borrow area applied linear transects parallel to the bankline of the river and levee, and following a 110 degree compass bearing taken from the levee crown. Maximum width of the transects was 20 m; shovel tests were excavated to 35-45 cm below surface at 50 m intervals along each of five transects.

Historic maps show standing structures close to where the modern levee now stands; thus, backhoe trenching was used to determine if remains of those structures were present. A total of 5 trenches were excavated to a depth of 3.5 to 4 m (the maximum depth that could be obtained by the arm and bucket of the backhoe). Backhoe monitoring included visual inspection of the excavation trench and inspection of the backdirt for any artifacts. Water was encountered at approximately 2 m below surface; unstable silts and sands from 2 to 4 m below surface were prone to slumping. Trenches were excavated as close to the riverside toe as possible, within the boundaries of the borrow. The trenches were plotted on project maps and correspond approximately with structural locations shown on the historic maps. Trenches were numbered consecutively, upriver to downriver.

Trench 1 was located near Levee Station 1361 + 10.81, on the boundary of sections 21 and 22, in Township 9 south, and Range 1 east. It was placed 45 m from the levee crown, inside the borrow area, and perpendicular to the levee and to the river on a 210 degree azimuth. From the surface to 40 cm, a stratum of 2.5Y 4/2 sandy silt present as a result of recent deposition. From 40 to 60 cm below surface, a 10YR 3/2 dark grayish brown clay silt, mottled heavily with 7.5YR 3/2 dark brown ferrous oxide inclusions and decomposing organic compounds, was present. The next stratum, from 60-80 cm, was a 10YR 4/2 dark grayish brown silt, mottled with 7.5YR 3/4 ferrous oxides. Between 80 - 110 cm below surface, a 10YR 3/1 very dark gray silt loam mottled with ferrous oxides was observed. Below it, from 110 cm - 300 cm, was a 2.5Y 4/2 dark grayish brown sandy silt. At 120 cm below surface, bedsprings were found; a few small pieces of unidentified metal and one modern bottle were found in association with the bedsprings. These remains represent modern refuse disposal. Water was encountered at 2 m; slumping occurred from 2-3 m below surface. The soils from the backdirt pile were examined, and a profile was drawn of a 5 m section of the trench wall (Figure 12). Photographs were taken of the trench and of the lens of modern refuse.

Trench 2 was located approximately 60 m downriver from Trench 1 and 35 m from the toe of the levee, perpendicular to the levee and river on a 224 degree azimuth. This trench was excavated to 3.6 m. The stratigraphy was essentially the same as that observed in Trench 1, consisting of layers of silt and silty clays. No artifactual materials were encountered. A 5 m profile of the trench wall was drawn (Figure 13) and photographs were taken.

Trench 3 was located on the boundary line of sections 22 and 23, approximately 320 m from Trench 2. The trench was placed 38 m from the riverside toe of the levee, into the borrow area and perpendicular to the levee and river on a 212 degree azimuth. This trench encountered an oyster shell and brick lens at 72 - 120 cm below surface. This lens, which was designated SG-8, corresponds to the location of standing structures shown on the 1876 Mississippi River Commission chart. A 5 m section of the trench wall was drawn (Figure 14), and photographs were taken. The top stratum, from the surface to 40 cm below surface, comprised a 10YR 3/2 very dark grayish brown clay loam. From approximately 40 cm to 72 cm below surface, a 2.5Y 4/2 dark grayish brown sandy silt was present. The next stratum, from 72 cm to 120 cm, was a 10YR 4/1 dark gray silt clay containing a dense oyster shell and brick lens extending the entire length of the trench. From approximately 1.2 m to 3.5 m, a stratum of 10YR 4/2 dark grayish brown silty clay mottled with ferrous oxides was present. A 2.5Y 4/0 dark gray clay was present from 3.5 to 4 m, the



- I 2.5Y 4/2 sandy silt
- II 10YR 3/2 very dark grayish brown clay silt mottled heavily with 7.5YR 3/4 dark brown ferrous oxide inclusions and decomposing organics
- III 10YR 4/2 dark grayish brown silt mottled with 7.5YR 3/4 ferrous oxide
- IV 10YR 3/1 very dark gray silt loam mottled with 7.5YR 3/4 ferrous oxide
- V 2.5Y 4/2 dark grayish brown sandy silt

Figure 12. Stratigraphic profile of the southeast wall of Backhoe Trench 1 at Borrow Area 202.2.

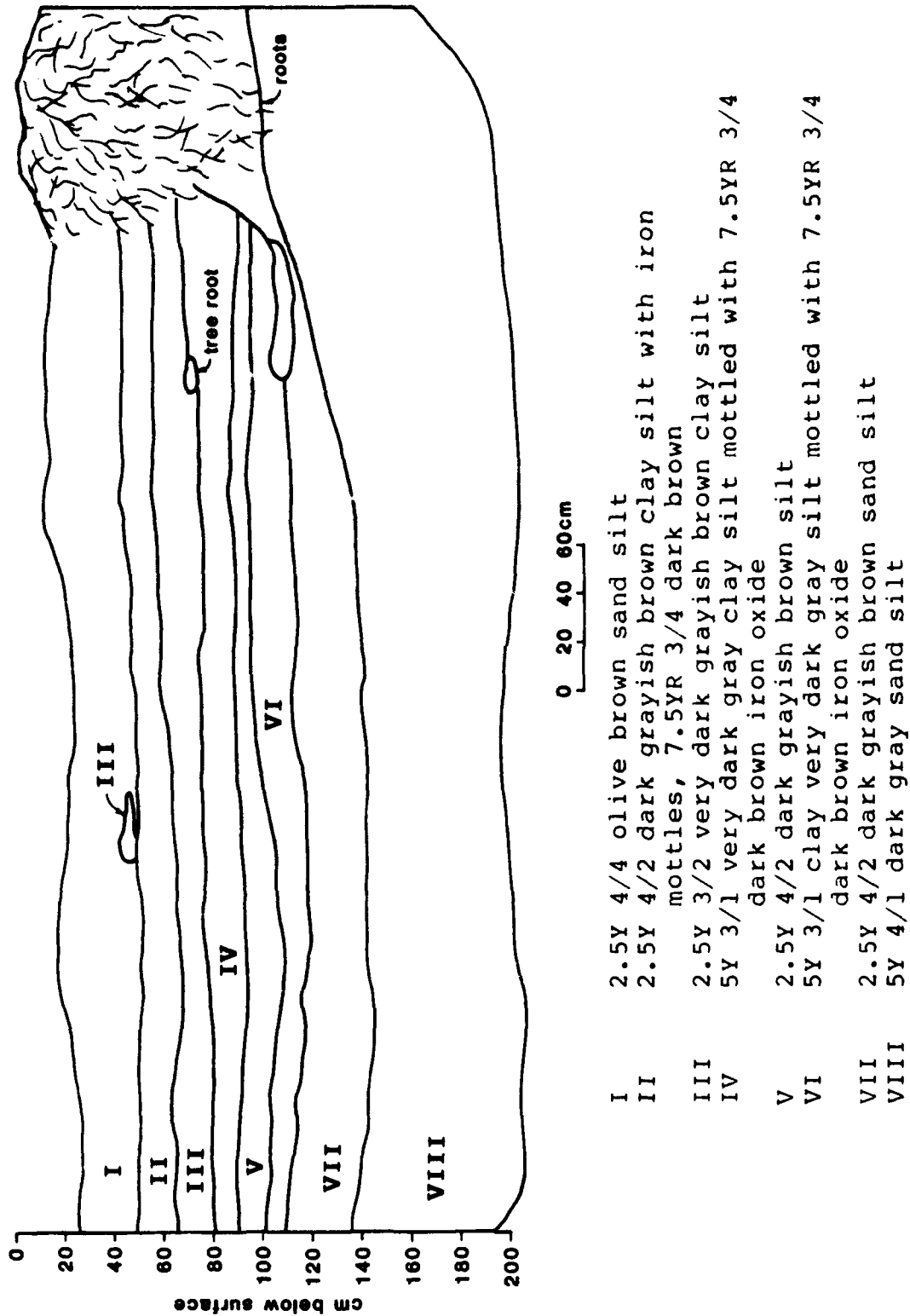


Figure 13. Stratigraphic profile of the southeast wall of Backhoe Trench 2 at Borrow Area 20x2.

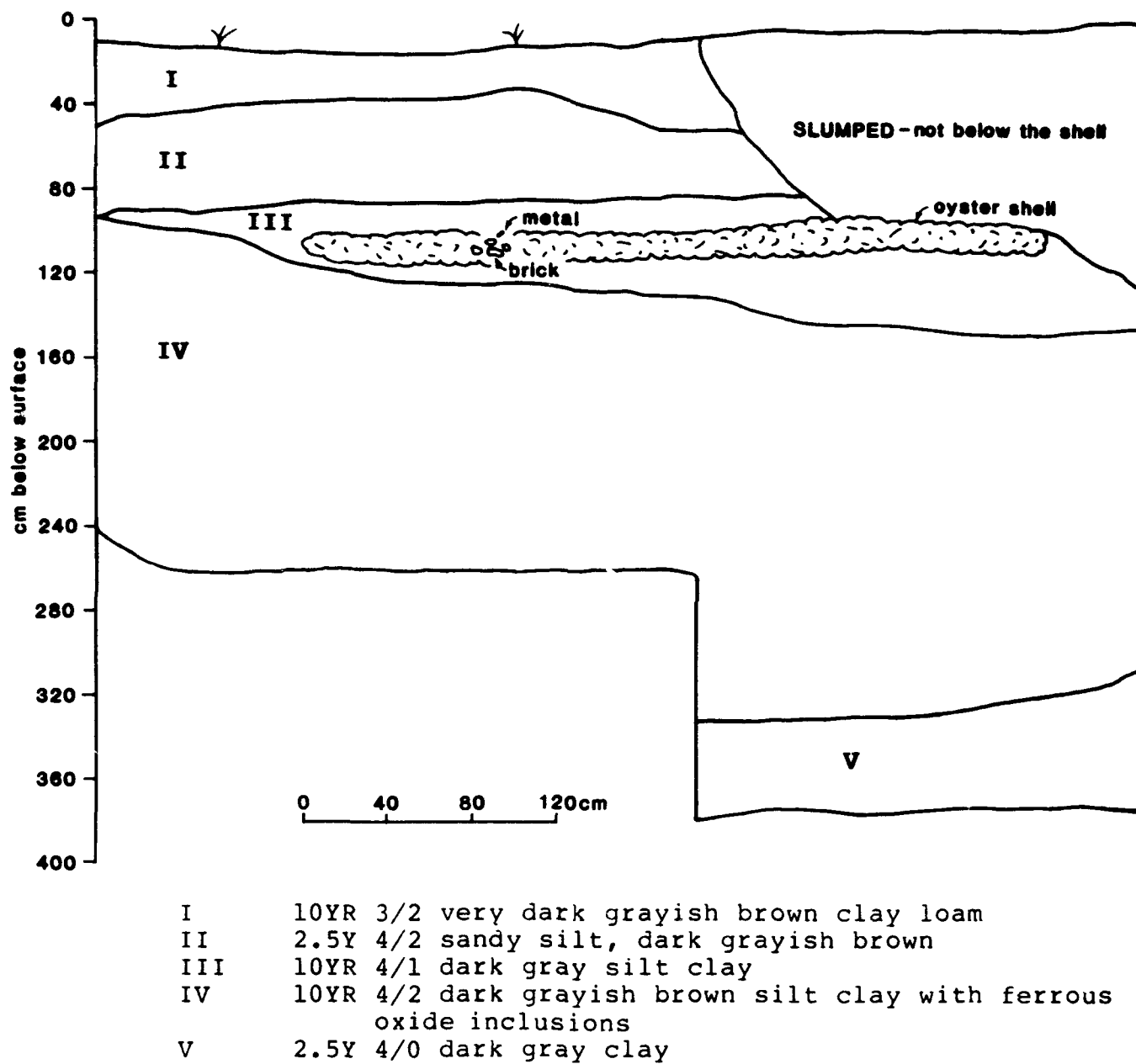


Figure 14. Stratigraphic profile of the northwest wall of Backhoe Trench 3 at Borrow Area 202.2.

maximum depth of excavation. Water was encountered at 2 m below surface, and slumping occurred at the water table.

During the antebellum period, the part of the project area containing Sections 22 and 23 was divided into several small farms. In 1858, E. Leblanc was the owner of Section 22, and the Widow N. Leblanc owned Section 23. Neither of these names appears in the sugar production records of the time nor in the census of large slaveowners. The absence of reported cane cultivation is an almost proof-positive indication that they were small subsistence farmers.

The Mississippi River Commission Chart No. 67 (Figure 15) shows that in 1879, Section 22 was divided into three small tracts, owned by Mrs. Miller, Blanchard, and E. Leblanc. In this section, the levee curved back to protect two small structures, which might have served as storehouses. Four small buildings stood on the land side of the levee, near the boundary of Section 23.

In 1879, M. Barthel owned Section 23, as shown on the Mississippi River Commission Chart for that year. His production was listed in the *Sugar and Rice Report* for 1879-1880 as 6 hogsheads of sugar. Having no sugar house, Barthel probably sold his modest harvest to a nearby commercial factory for processing. The Mississippi River Commission map also shows that a ring of about 12 small structures stood on the land side of the 1876 levee. One side of this ring of buildings fell on the boundary between Sections 22 and 23. Two large structures stood on the river side of the levee, near the Bayou Paul Landing (Figure 15).

Trenches 4 and 5 did not reveal any cultural remains. These were both excavated to approximately 4 m. Trench 4 was located 30 m from the downriver boundary corner and 30 m from the riverside toe of the levee. Trench 5 was located 15 m from the downriver corner stake of the borrow area and approximately 30 m from the riverside toe of the levee. Both of these trenches exhibit the same stratigraphy (Figures 16 and 17). Three strata occur: the top stratum, from the surface to 40 cm below surface, a 10YR 3/2 very dark grayish brown silt loam; the middle stratum, from 40 cm to 1.2 m below surface, a 10YR 3/3 dark brown sandy silt; and, the bottom stratum, a 10YR 4/2 dark grayish brown silty clay from 1.2 m to 4 m. These trenches were placed near the locations of structures shown on the historic maps. Failure to locate more remains could be due to: prior removal of structures before levee construction, since the batture was extensively borrowed in the 1920s and 1930s; the fact that they are buried deeper than 4 m; or, the removal or destruction of structures by the river during floods. This area has been revetted previously; however, deep testing inside the proposed borrow pit boundary was necessary to determine if the remains of historic structures still exist.

River Mile 198.6 to 196.0-L

Two borrow pits are located within this corridor, between RM 198.5 and 198.0. A 1 mi priority segment for 1988 revetment construction is located from RM 198.6 to 197.6. Future revetment is proposed for RM 197.6 to 196.0. The corridor was surveyed in segments because of the need for rapid information on the priority areas, which were surveyed first. The proposed borrow area at RM 198.5 (275 m by 76 m) was surveyed as a single segment from the riverside levee toe to the river's edge. The borrow boundaries are just inside the riverside toe of the levee and the bankline. Seven transects 275 m long, spaced 20 m apart, were shovel tested at 50 m intervals. A modern trash dump at the upriver boundary marked the beginning of the borrow pit. Trees in the area included sycamore, hackberry, willow, and oak. The understory also was dense, which restricted surface visibility. The bankline survey located one site at the downriver boundary along the cutbank; it was designated as 16IV152, and it consisted of a surface scatter of historic artifacts along the river's edge. This site was flagged and plotted on the aerial project maps and the appropriate topographic map. Testing of this site began after the pedestrian survey was completed. A detailed description of the site and the results of the testing are contained in Chapters VI and VII. This

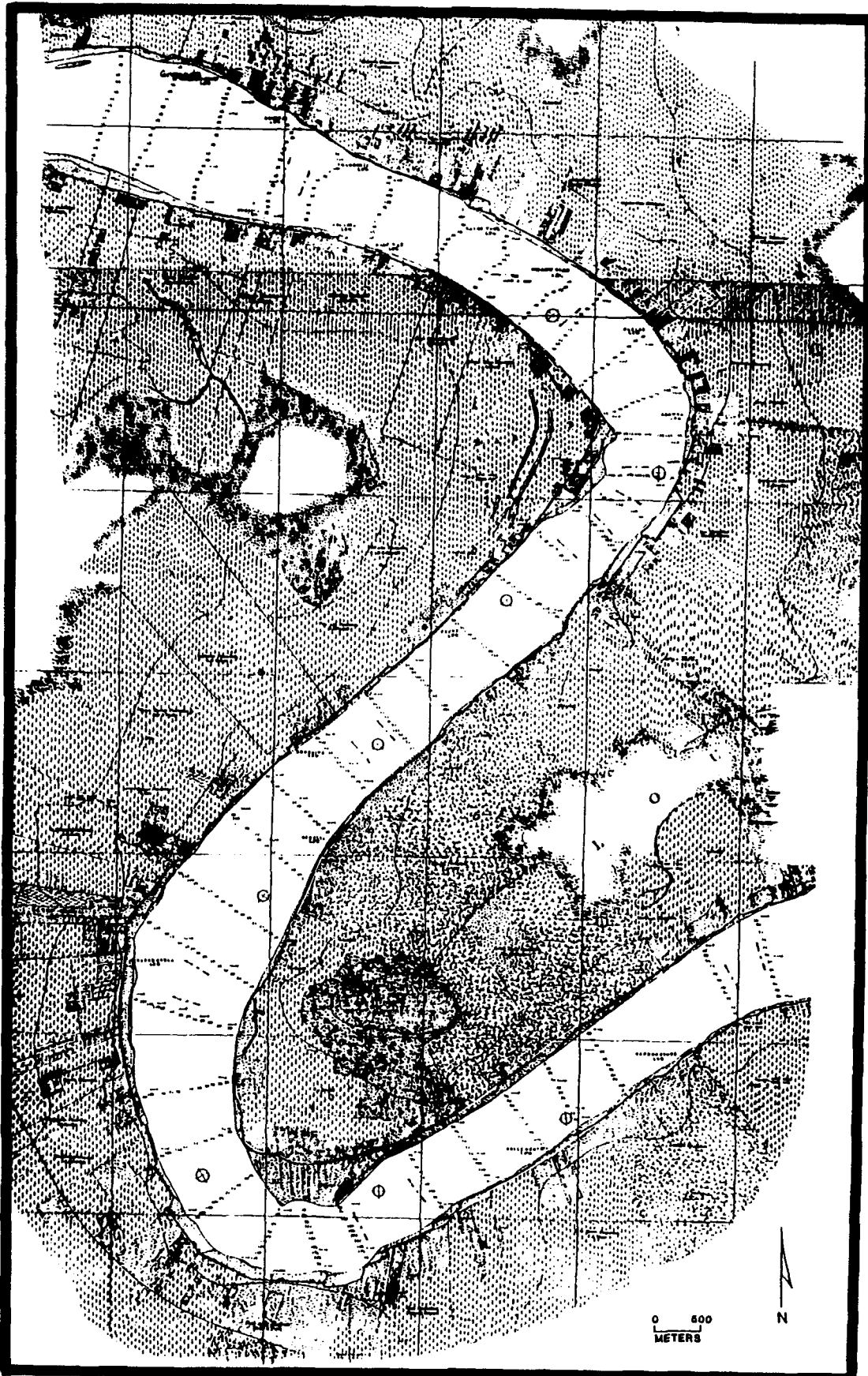
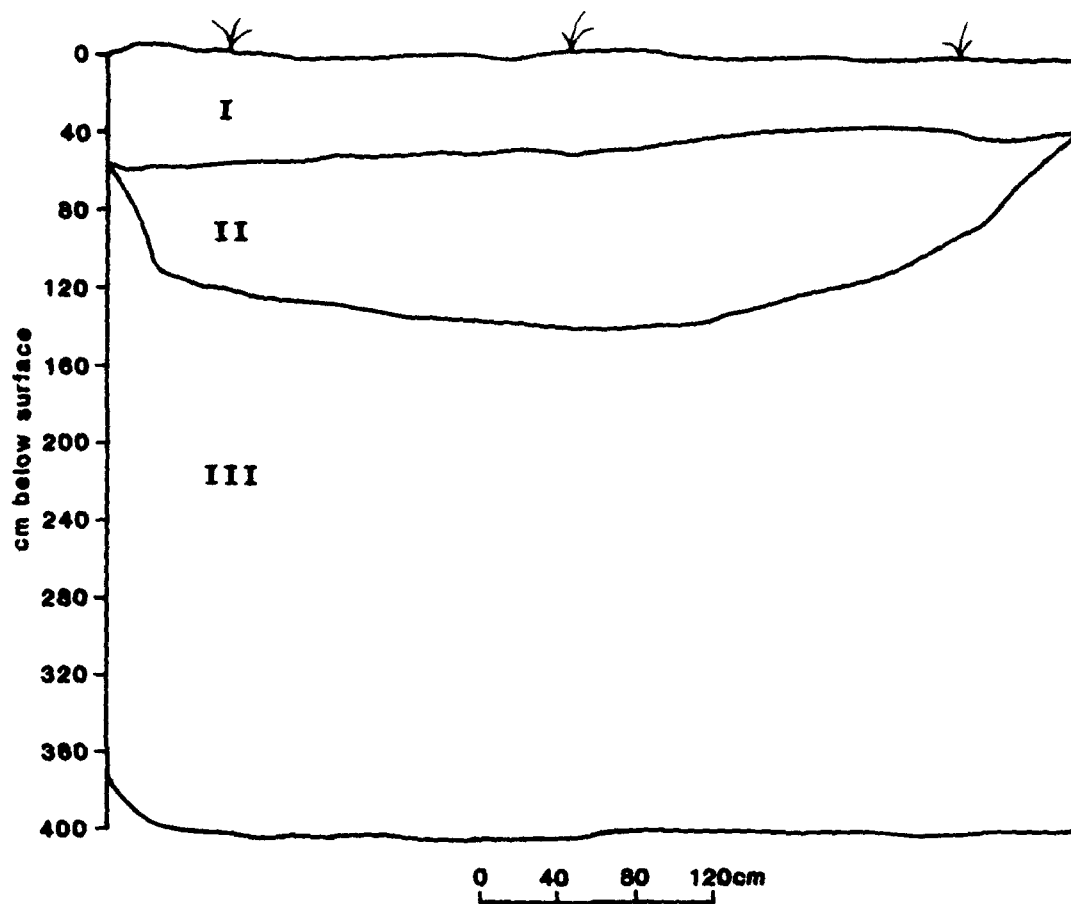


Figure 15. [1879 - 1880] Excerpts from "Survey of the Mississippi River, Made under the Direction of the Mississippi River Commission," Chart Nos. 67 and 68.



- I 10YR 3/2 very dark grayish brown silt loam
- II 10YR 3/3 dark brown sandy silt
- III- 10YR 4/2 dark grayish brown silty clay

Figure 16. Stratigraphic profile of the southeast wall of Backhoe Trench 4 at Borrow Area 202.2.

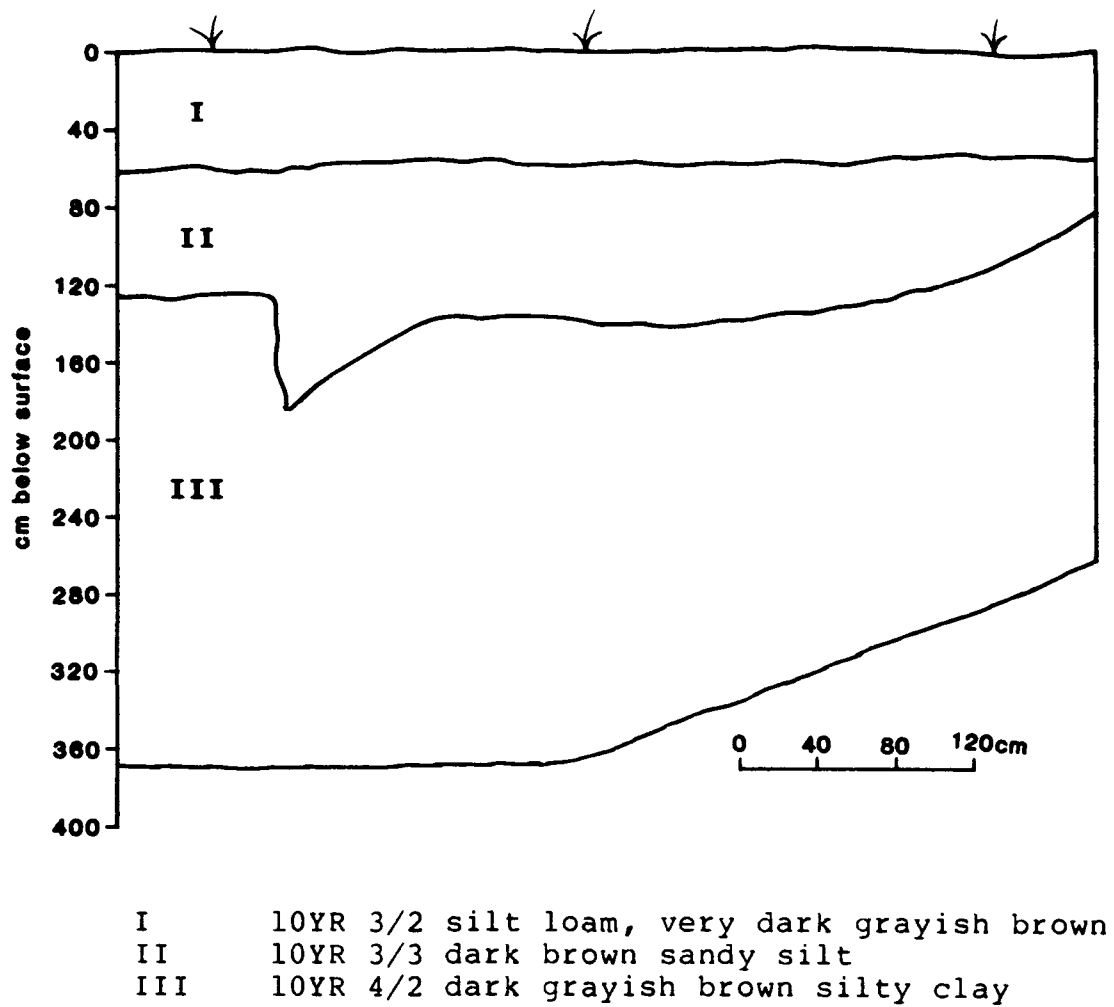


Figure 17. Stratigraphic profile of the southeast wall of Backhoe Trench 5 at Borrow Area 202.2.

site is not in the proposed borrow area; it is in a 1 mi priority section (RM 198.6 to 197.6) of the downriver segment of the St. Gabriel revetment, at RM 198.5, between Levee Stations 1607 + 32 and 1604.

Five 5 m long backhoe trenches (Figure 18) were excavated in this borrow area, perpendicular to the river and the levee. The trenches were monitored for structural remains and the backdirt was inspected for any evidence of artifacts. Historic maps of this area show ten standing structures in 1876 and eight structures in 1921, all of which were located in section 40. Each trench was excavated to a depth of 4 m, and no cultural resources were encountered. Trenches were started at the upriver boundary and excavated (and numbered) consecutively downriver. The trenches were plotted on the aerial project maps. A section of 5 m wall in each trench was profiled and photographed. The placement of the backhoe trenches was influenced by large trees. The soils in these trenches consisted mainly of silts and clays (overbank deposits) (Figures 19 - 23). Nearly horizontal layers of silts and clays interspersed with ferrous oxides were deposited in thin layers as a result of frequent flooding of the batture. The large dump at the upriver boundary showed evidence of recent disturbance; no remains of the historic structures were found. These structures either were removed prior to construction of the present levee or they are deeper than the 4 m depth of the trenches. Given the large number of structures that appear on the historic maps, the absence of remains probably indicates prior destruction or removal.

The second proposed borrow pit (440 m by 76 m) is located at RM 198.0. This area also is located in the 1 mi segment slated for 1988 revetment construction. Seven transects, approximately 440 m long, at 20 m intervals, were traversed from the riverside toe of the levee to the river's edge; shovel tests were excavated to 40 cm below surface at 50 m intervals. Artificial features present included drainage ditches and an aboveground pipeline. A water-filled borrow pit was encountered at the downriver boundary. No cultural resources were encountered in this borrow area.

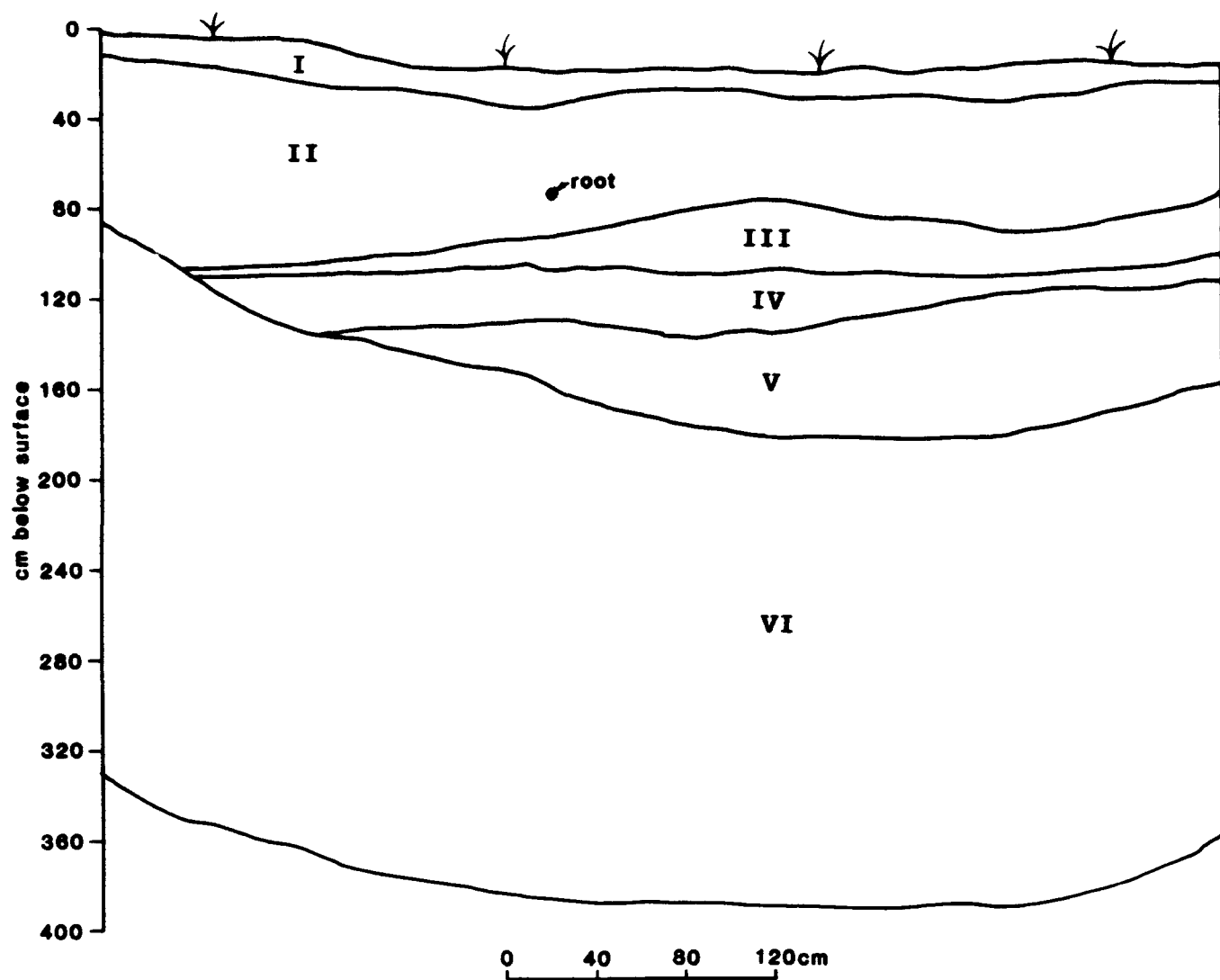
The remainder of the 1 mi priority revetment segment was surveyed in three segments. Between four and eight transects were needed, depending on the width of the batture and amount of standing water in the borrow pits. No sites or subsurface remains were located or identified.

From RM 197.6 to 196.0, pedestrian survey was completed from the riverside toe of the levee to the river's edge. Three sites (16IV153, 16IV154, and 16IV155) were recorded along the bankline; two single artifact spot finds also were examined. Site 16IV153 is located along the bankline at approximate RM 197.5. This site initially was observed during the pedestrian survey of the bankline as a subsurface cultural lens of brick and coal eroding from the bankline. After the river level receded, artifacts were visible along the erosional surface of the bankline. The artifacts included ceramics, glass, brick, coal, and metal, Figure 19 extending along the bankline for approximately 100 m. A large water-filled borrow pit is located on the landward side of the site, suggesting this site may be in a disturbed context. This site does not correspond to any structures shown on historic maps of the area.

Site 16IV154 initially was discovered and flagged during pedestrian survey of the bankline; it initially was recorded as two separate sites. However, upon further investigation it was observed to be one continuous lens. This site is a subsurface cultural lens of brick and coal eroding from the bankline at a depth between 116 - 146 cm below surface. A more detailed description of this site appears in Chapter VIII.

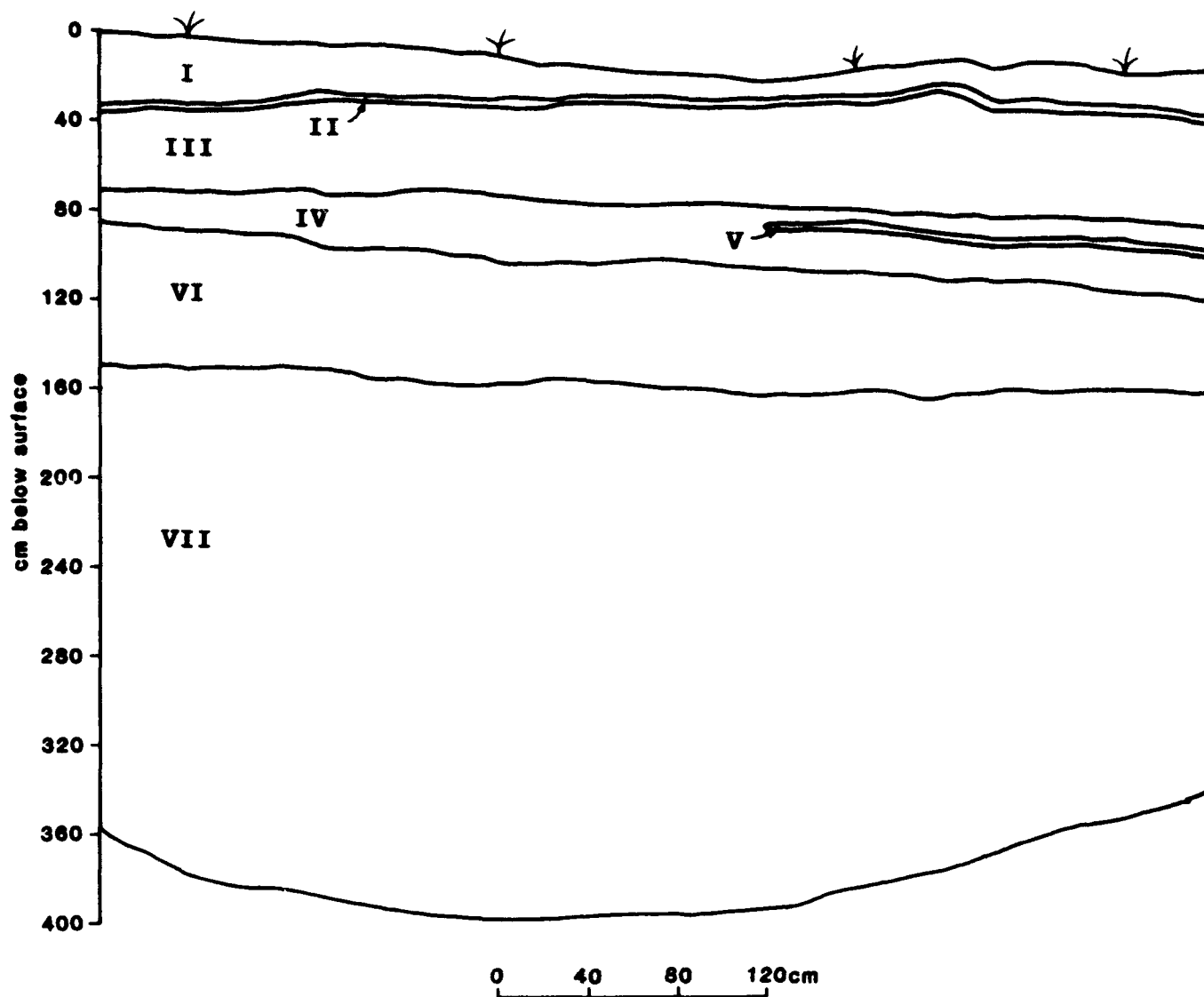
Two artifact spot finds (initially designated as SG-5 and SG-6) consisted of a broken metal hoop, located along the river's edge above RM 196.0, and a metal hitch, located just downriver from the hoop. Due to the lack of additional remains, these were not designated as sites.

Site 16IV155 was encountered along the bankline between RM 195.9 to 196.2. A water-filled borrow pit extends from RM 196.5 to 196.0 along the riverside toe of the levee. Almost half of the batture was unsurveyable because of standing water. Transects were designed to avoid the borrow pit. Four transects followed a compass bearing of 210 degrees. The transects were spaced 20 m apart and covered the area between RM 197.5 and 196.0.



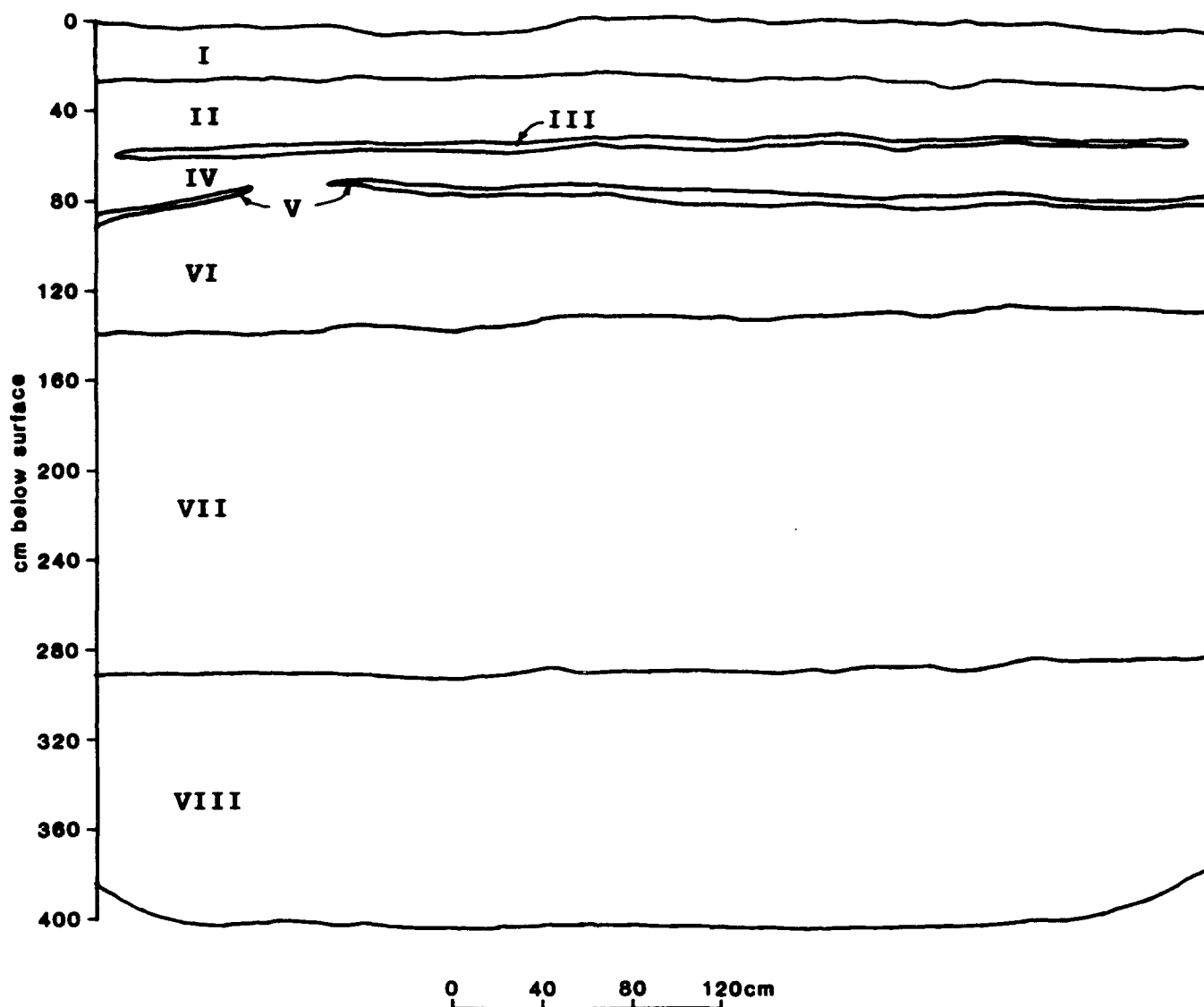
- | | |
|-----|--|
| I | 10YR 3/3 dark brown silt loam |
| II | 10YR 5/3 brown sandy silt |
| III | 10YR 3/3 dark brown clay silt |
| IV | 10YR 3/3 dark brown clay silt with 10YR 6/3 mottled
with sand |
| V | 10YR 3/3 dark brown clayey silt with ferrous oxide
inclusions |
| VI | 10YR 4/3 dark brown silty clay |

Figure 19. Stratigraphic profile of the northeast wall of Backhoe Trench 1 at Borrow Area 198.5.



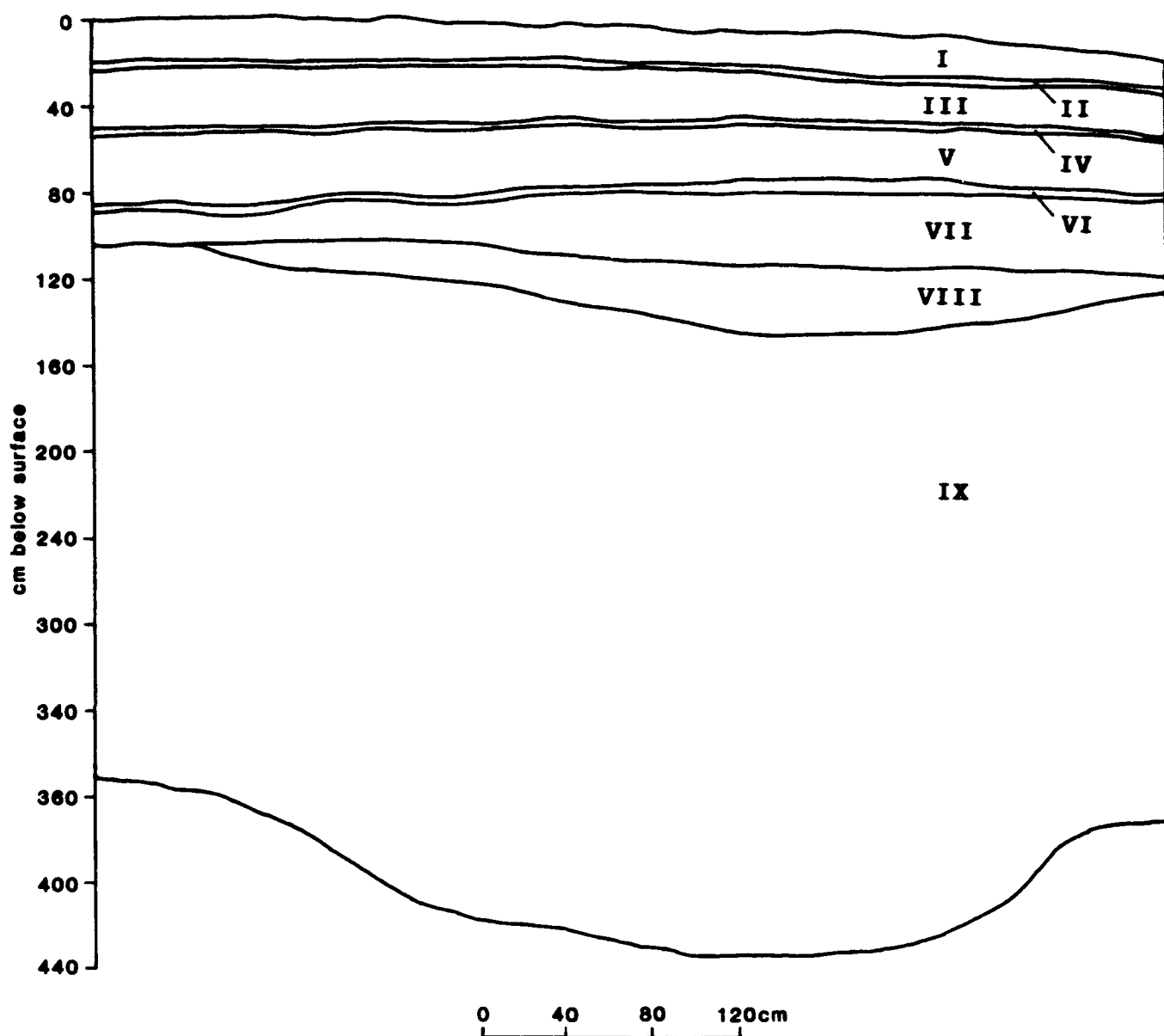
I	10YR 3/3 dark brown silt loam
II	10YR 3/1 very dark brown silt loam
III	10YR 3/3 dark brown silt loam
IV	10YR 3/2 very dark grayish brown silt clay
V	10YR 3/1 very dark gray silt
VI	10YR 4/3 dark brown silty clay
VII	10YR 3/3 dark brown silty clay

Figure 20. Stratigraphic profile of the northeast wall of Backhoe Trench 2 at Borrow Area 198.5.



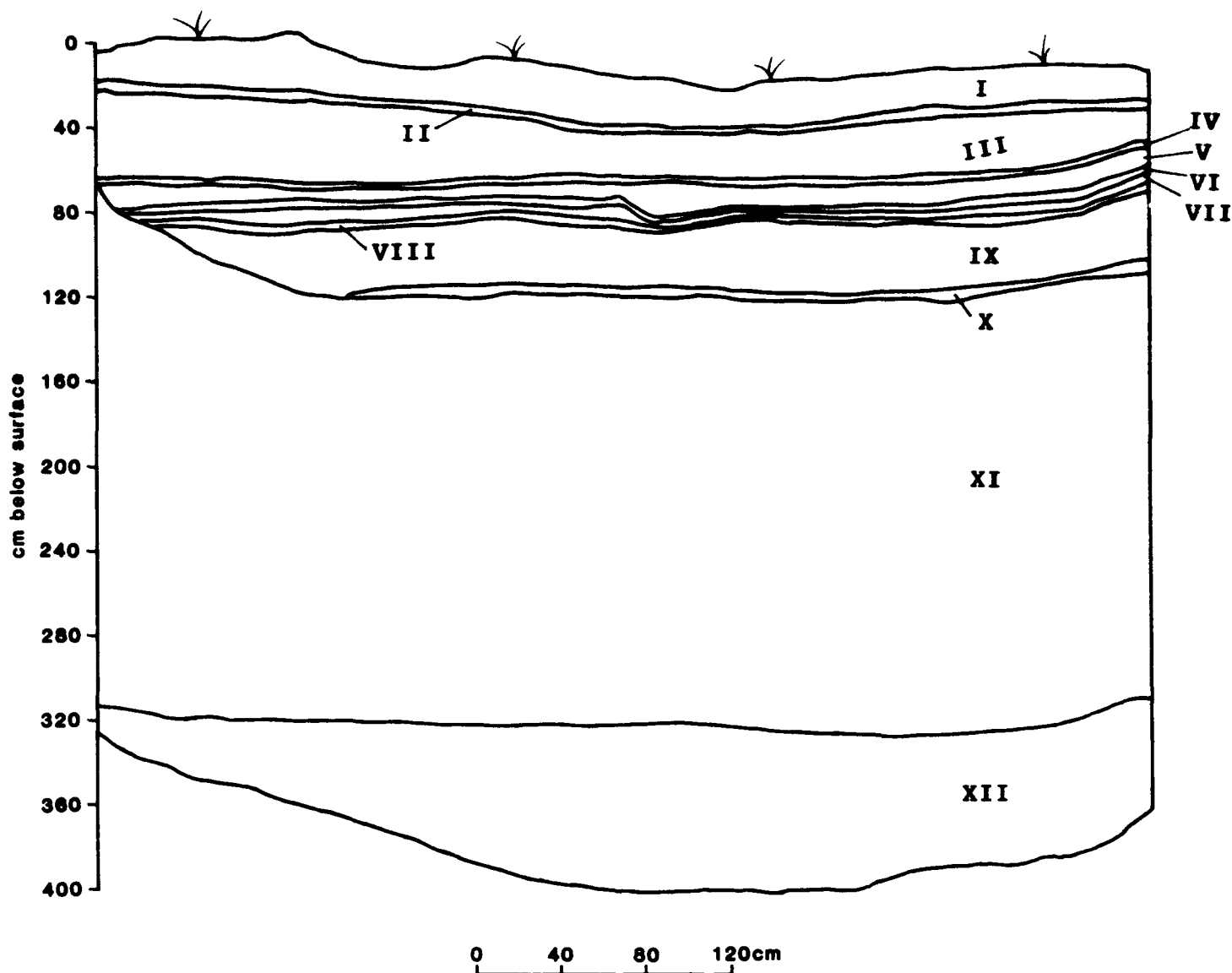
I	10YR 3/3 dark brown sandy silt loam
II	10YR 5/3 brown silty sand
III	10YR 3/2 very dark grayish brown silt loam
IV	10YR 5/3 brown silty sand
V	10YR 3/2 very dark grayish brown silt loam
VI	10YR 3/3 dark brown silty clay
VII	10YR 3/3 dark brown silty clay mottled with ferrous oxide
VIII	10YR 3/1 very dark gray clay

Figure 21. Stratigraphic profile of the northeast wall of Backhoe Trench 3 at Borrow Area 198.5.



I	10YR 4/2 dark grayish brown silt
II	10YR 3/2 very dark grayish brown silt loam
III	10YR 5/3 brown silt with 10YR 6/2 sandy silt
IV	10YR 3/2 very dark grayish brown silt loam
V	10YR 3/3 dark brown silt mottled with ferrous oxide
VI	10YR 3/2 very dark grayish brown silt loam
VII	10YR 3/2 very dark grayish brown silt clay
VIII	10YR 4/2 dark grayish brown sandy silt
IX	10YR 3/2 very dark grayish brown mottled silty clay

Figure 22. Stratigraphic profile of the northeast wall of Backhoe Trench 4 at Borrow Area 198.5.



I	10YR 4/2 dark grayish brown silt
II	10YR 3/2 very dark grayish brown silt loam
III	10YR 5/3 brown silt with 10YR 6/2 sandy silt
IV	10YR 3/2 very dark grayish brown silt loam
V	10YR 3/3 dark brown silt mottled with ferrous oxide
VI	10YR 3/2 very dark grayish brown silt loam
VII	10YR 3/3 dark brown silt mottled with ferrous oxide
VIII	10YR 3/2 very dark grayish brown silt loam
IX	10YR 3/3 dark brown silt mottled with ferrous oxide
X	10YR 3/2 very dark grayish brown silt loam
XI	10YR 3/3 dark brown silt mottled with ferrous oxide
XII	10YR 3/2 very dark grayish brown silt clay

Figure 23. Stratigraphic profile of the northeast wall of Backhoe Trench 5 at Borrow Area 198.5.

Site 16IV155 is an historic surface scatter of ceramics, glass, and pieces of metal hardware. Subsurface testing included auger and shovel testing; these did not produce any cultural remains. A bluff profile was cleaned and recorded. No recorded historic structures correspond to this site. The relative stability of the bankline over the last century, and the apparent absence of any subsurface cultural deposits, suggest that site 16IV155 is a river-deposited feature, and that the artifacts were washed up on the bankline when the river was at a higher level than at present.

River Mile 191.9 to 191.0

This survey corridor is the upstream extension of the New River Bend Revetment Item and is scheduled for construction in 1988. This segment occupies the batture adjacent to the Gillis W. Long Hansen's Disease Center (National Leprosarium); this public hospital occupies the former grounds of Indian Camp Plantation, an antebellum sugar plantation.

Acquired in 1825 by Robert Coleman Camp, a young Virginian, Indian Camp Plantation contained 21 arpents in 1826. Camp held 15 slaves in that year; by the time of the Civil War, his labor force had increased to 117 bondsmen who lived in 11 slave cabins. In 1859, Camp built an elaborate new raised brick Italianate plantation house that presently serves as an administration center of the Disease Center. The Civil War and emancipation forced Camp into bankruptcy by 1873. The plantation struggled along for the next 20 years under a series of tenants who attempted rice growing. In 1894, the state of Louisiana first leased (and ultimately purchased) the property for a leprosarium.

The upriver boundary of this reach is the Hunt Correctional Facility. Five percent of the upriver portion of this segment is part of an aggrading bankline where frequent flooding redeposits sediments, and where any sites would be deeply buried. Thus, no shovel tests were excavated there. A walkover and surface inspection of the area was completed in 5 linear transects. The remaining 95 percent of this segment was surveyed in 5 linear transects spaced at 20 m intervals from the riverside toe of the levee to the river's edge. Transects followed a compass bearing of 46 degrees, parallel to river and to the levee. Shovel tests were spaced at 50 m intervals along each transect and excavated to 35 - 45 cm below surface.

A large modern trash dump encompasses about 300 m of the survey area. Concrete pilings and pipes are located within the limits of the dump. Drainage ditches and access roads also are present. The White Castle Ferry landing is located at the downriver boundary; this area has been contaminated heavily by the *Rangia* shell fill associated with the landing. The soils encountered in this corridor consist mainly of sands, silts, and clays. Vegetation consists of sycamores, oaks, willows, and hackberry, with tall grasses, poison ivy, and blackberry briars making up the understory. Besides the trash dump, no other cultural remains, either historic or prehistoric, were recorded.

Summary

Field investigations of the New River Bend Revetment, St. Gabriel Revetment, and St. Gabriel Levee Enlargement items yielded four previously unrecorded archeological sites. Two of the ten backhoe trenches dug in search of expected buried historic sites produced cultural remains. These trenches were placed where historic structures once stood. Additional remains were not found for the following reasons: (1) structures were removed before previous levee construction in the early twentieth century; (2) the sites may be buried deeper than the 4 m deep backhoe trenches; (3) placement of the trenches was restricted by trees, and test locations may have been estimated incorrectly; or, (4) the river destroyed these structures during redundant flood stages.

CHAPTER VI

SITE DESCRIPTIONS AND INTERPRETATIONS

St. Gabriel Site 1 (16IV152)

During pedestrian survey, historic glass fragments, ceramic sherds, bone, and metal artifacts were observed along the cutbank of the river in Township 9 East, Range 1 South, in Sections 40 and 41. This scatter extended approximately 88 m along the bankline, between Levee Stations 1604 and 1607 + 32.

Following completion of the pedestrian survey, site testing began with the establishment of two datums and the completion of two 1 meter wide profiles along the cutbank. Profile 1 was excavated 7.2 m downriver from Datum 1; Profile 2 was excavated near the downriver boundary of the site (Figure 24). Profile 1 was characterized by 10 YR 4/2 dark grayish brown clay silt loam and 2.5 Y 4/4 olive brown silt loam within the first twenty centimeters of the surface. Beneath these strata, a heterogeneous silty sediment containing artifacts was present (Figure 25). Profile 2 exhibited a similar 10 YR 4/2 dark grayish brown clay silt loam within the top 20 - 28 cm of the surface. Tree roots were present within this zone. Both this stratum and that immediately below it contained historic artifacts (Figure 26). However, artifacts were sparse in both profiles.

Auger tests were utilized to define the limits of the site. A series of auger rays were established out from the site datum along 60, 120, and 200 degree azimuths. Auger tests at 10 m from datum along the 200° azimuth produced coal fragments between 20 and 80 cm below the surface. At 15 m from datum, along the same bearing, oyster shell fragments were identified between 20 and 60 cm below surface. A concentration of artifacts at the bankline at the downriver limit of the site warranted the placement of two additional auger test rays. These rays radiated at 140 and 200 degrees from the upriver stake of Profile 2. Fifteen 2 m deep auger tests were completed at the site.

An additional seven shovel tests were excavated at five meter intervals parallel to the river, near the eroding bankline. Artifacts were present up to 50 cm deep in all seven shovel tests. A controlled surface collection was conducted along the eroding area of the bankline, as well. The surface collection extended 60 m north and 80 m south of Datum 1. All artifacts were collected with the exception of unidentifiable metal fragments.

Site 16IV152 (Figure 24) is a linear scatter of historic artifacts located on the bankline just outside the limits of the borrow pit at mile 198.5. This site measures approximately 90 m in length and 15 m in width. Artifacts were visible in the cutbank between 20-30 cm below surface. Sediment profiles, deep auger testing, and shovel testing indicate that only the uppermost 20 or 30 cm of sediments occurred naturally. The lack of stratified deposits or clear artifact zones further demonstrates that considerable disturbance has occurred at the site. This site is located approximately 100 m downriver from a modern trash dump, and it is adjacent to a borrow area. None of the site remains intact.

Archival sources reveal that Section 40 was claimed in 1803 by Marguerite Brasseux; John Estevan claimed Section 41. These early inhabitants based their claims on the 1775 land grants issued by the Spanish government to Francisco Landry and Pedro LeBlanc, respectively (Lowrie and Franklin 1834). Brasseux was an Acadian, the daughter of Pierre Brasseux, and was one of the original immigrants to the St. Gabriel area. According to Ulloa's "List of the Acadian Families that Have Come to Establish Themselves in this Province of Louisiana," she was only ten months old when her family arrived in the colony (Chandler 1973:84). John Estevan was the son of Thomas Estevan, who was Commandant of Galvestown and

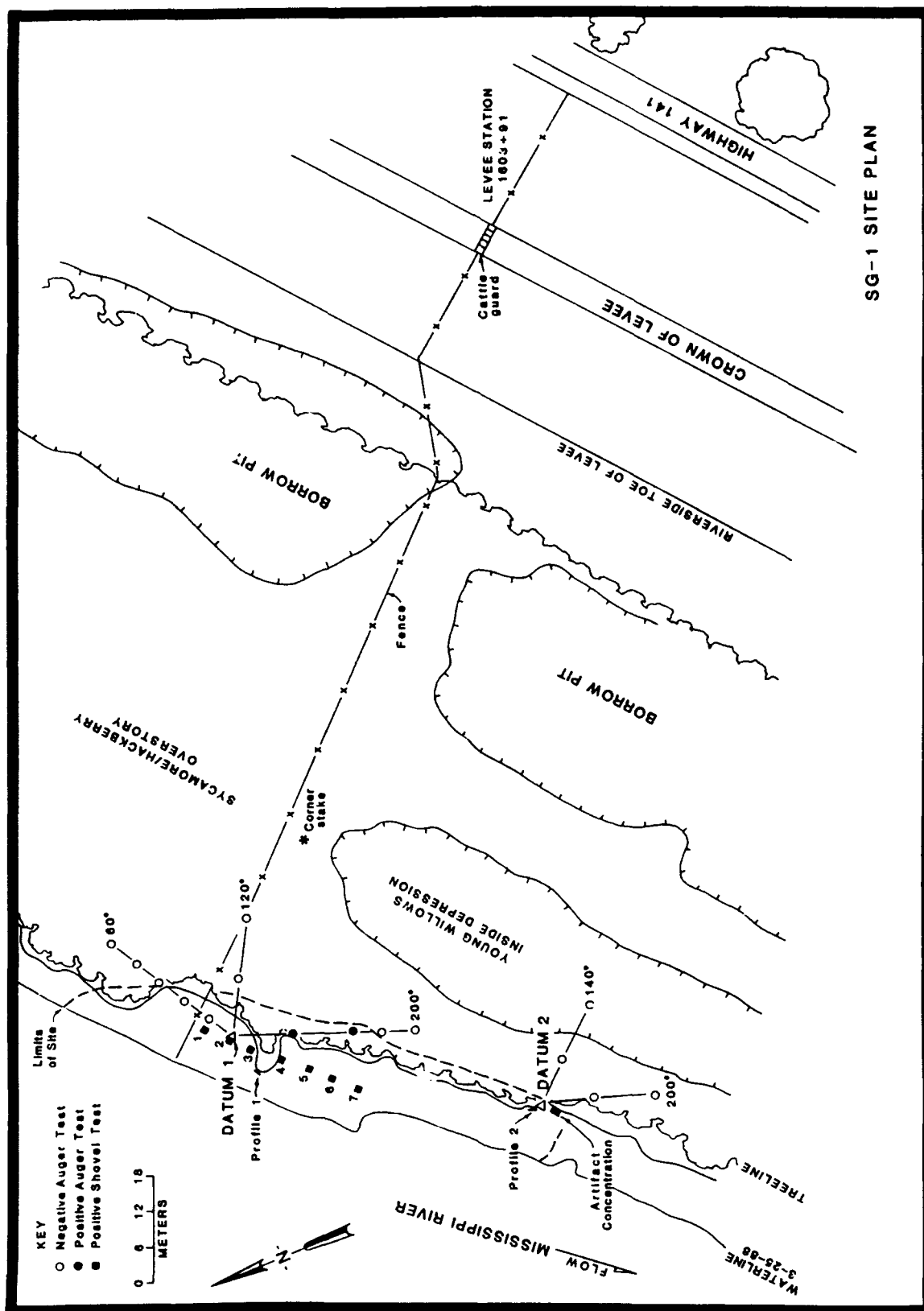
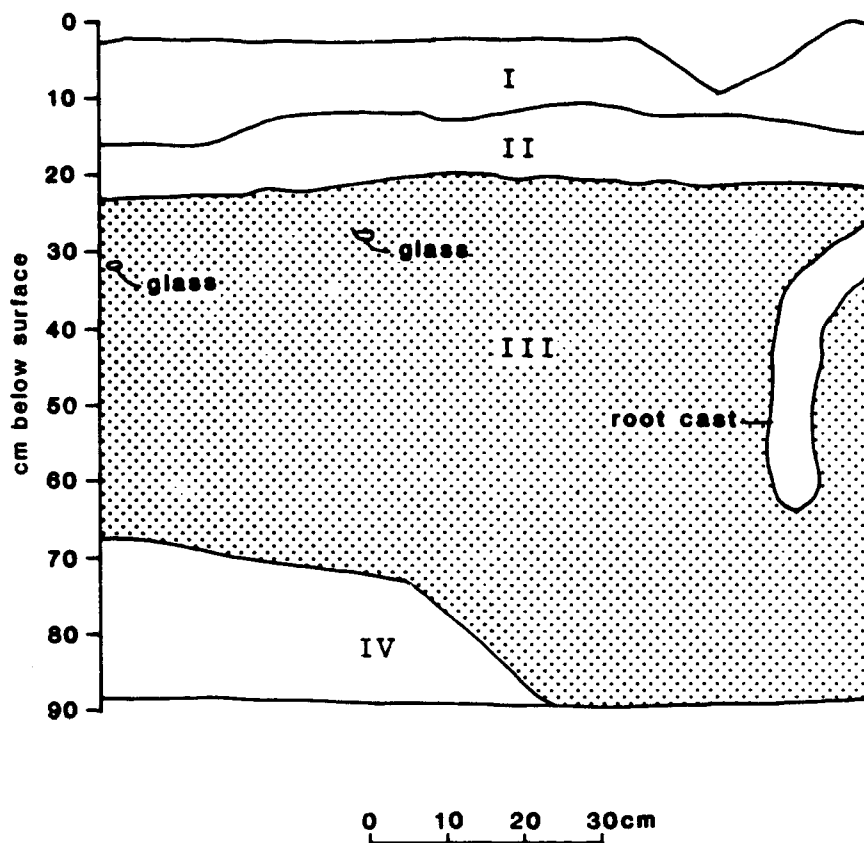
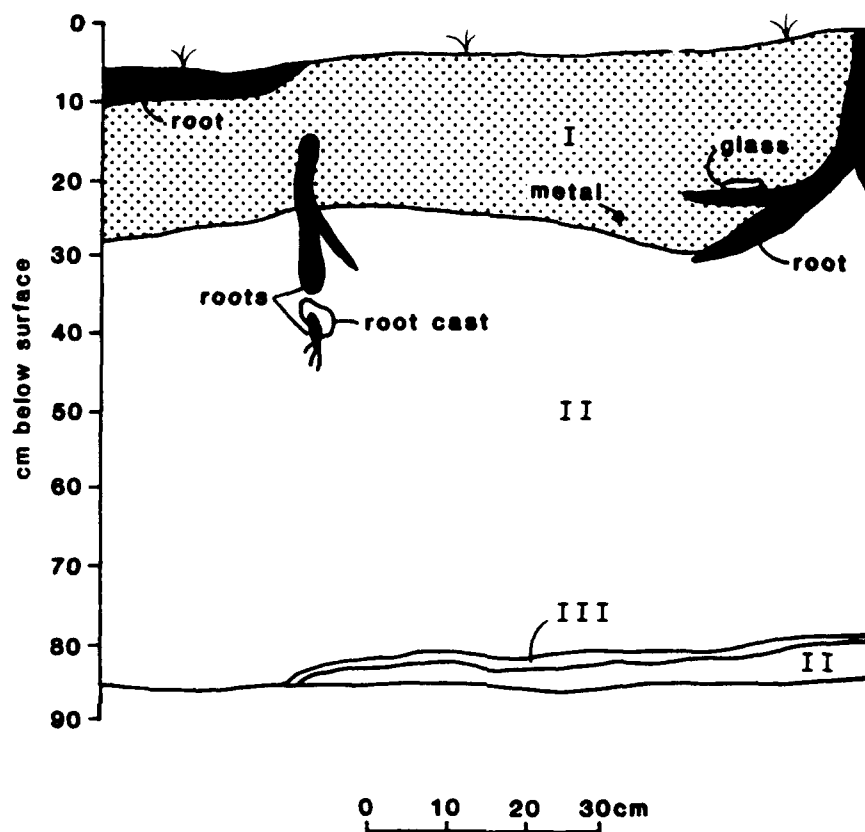


Figure 24. Site plan of 16IV152.



- I 10YR 4/2 dark grayish brown silt
- II 2.5Y 4/4 olive brown silt loam
- III 10YR 4/2 dark grayish brown clay silt with artifacts present
- IV 2.5Y 4/4 olive brown gray silt

Figure 25. Bluff edge stratigraphic Profile 1 at 16IV152, facing south.



I 10YR 4/2 dark grayish
brown clay silt with
artifacts present

II 2.5Y 4/4 olive brown silt

III 2.5Y 5/2 grayish brown
silt clay

Figure 26. Bluff edge stratigraphic Profile 2 at 16IV152, facing south.

commander of the Spanish Fort there at the time of the United States' takeover in 1803 (Riffel 1985:121). These sections initially were subsistence farms. A limited amount of sugar was produced in both sections prior to their consolidation, circa 1840. After that time, cane was cultivated on a larger scale.

The 1858 Persac map (Norman's Chart, Figure 27) shows that the two sections were under the ownership of Rene Arnous and formed part of his Virginia Plantation. Arnous, born in France, was a very successful sugar planter. The 1850 census report of Iberville Parish shows that Arnous' real estate holdings were valued at \$93,000 (Riffel 1981:135). The *Statement of the Sugar Crop Made in Louisiana* (Champomier 1844-1862) indicate that Arnous was one of the largest sugar producers on the East Bank of Iberville Parish, consistently producing over 200 hogsheads of sugar annually through the year 1862. Arnous' sugar mill was of brick and shingle construction, with a kettle and steam apparatus.

A census taken in 1860 listed Arnous' holdings at 400 acres of cultivated land, seven horses, 30 mules, twelve cows, two oxen, 80 sheep, and 20 swine, with the total livestock having been valued at \$1700. Production for the year was listed as 1500 bushels of Indian corn, 75 bushels of peas and beans, 40 bushels of Irish potatoes, 120 bushels of sweet potatoes, 20,000 gallons of molasses, and 240 hogsheads of cane sugar. The census also listed Arnous as the owner of 71 slaves, with 14 slave dwellings on his property (Menn 1964:242-3).

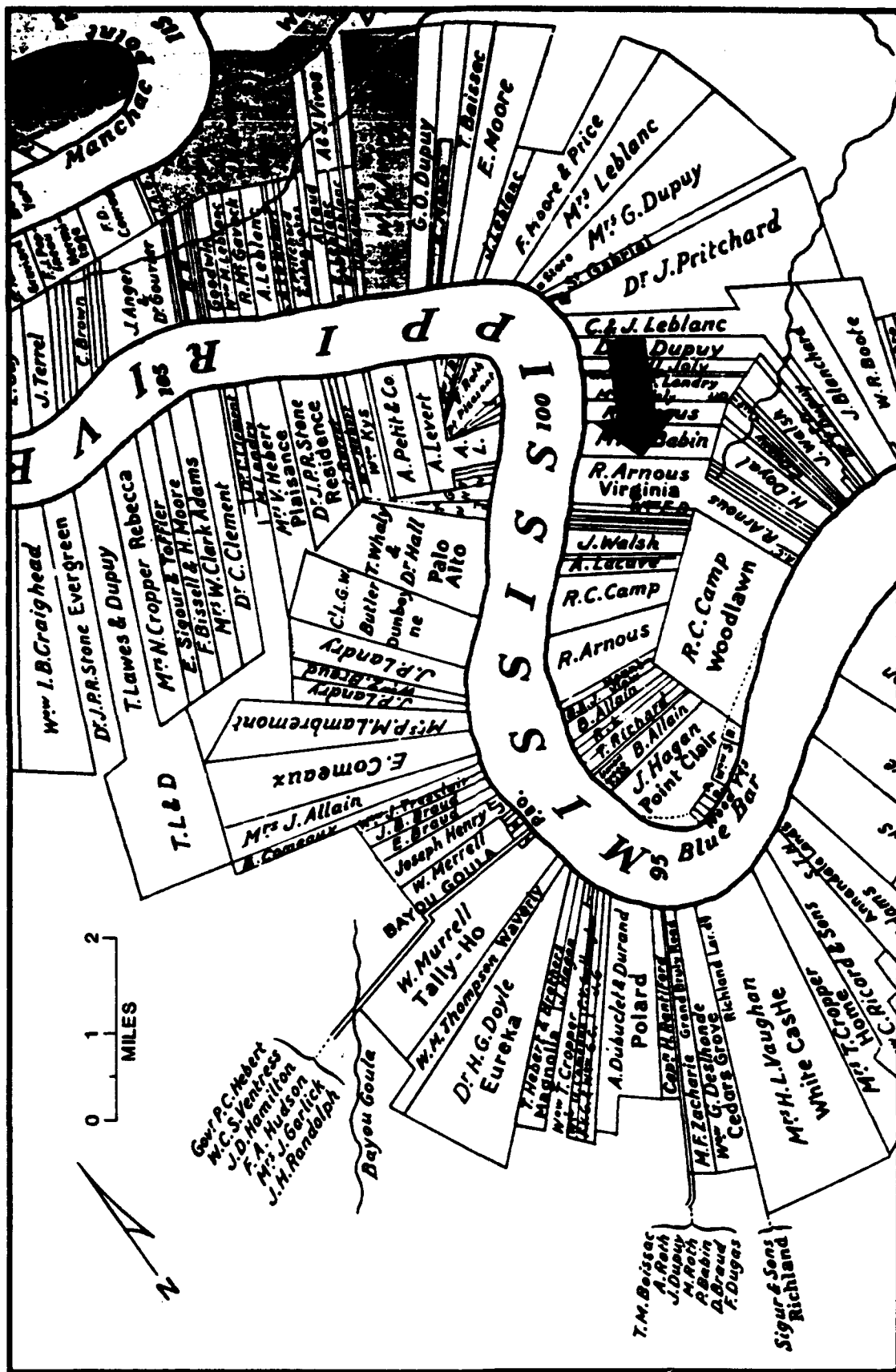
Like many Louisiana planters, Rene Arnous lost his plantation during the Civil War. In 1868, Virginia Plantation (Sections 40 and 41) was owned by Jean Alliot, and the plantation was struggling to continue production. It changed hands many times during the 1870s. Its owners included Theophile Allain, F. Brun, and J.A. Sowers. Sowers owned Virginia in 1877. During his one year of ownership, he incorporated a tract of land immediately upriver (Section 39), formerly owned by Mrs. V. Babin, into the plantation (Bouchereau and Bouchereau 1877-1878).

D. R. Carroll took over Virginia Plantation in 1878; the Mississippi River Commission Chart of 1879-1880 (Figure 15) shows Carroll as the owner of the property. This map also depicts a scattering of about ten small structures on the land side of the levee. The plantation still used the steam and kettle method of sugar production. This equipment was housed in a brick and shingle sugar house, as it had been during the antebellum period. In 1881, Carroll reported no sugar production at the Virginia Plantation; the following year, he was listed as owning a wooden sugar house, but once again produced no sugar (Bouchereau and Bouchereau 1881-1883). This information suggests that Carroll's brick and shingle sugar house was destroyed, perhaps by fire, and was replaced by a wooden one the following year.

Virginia Plantation was unable to produce a profitable sugar crop in the years that followed, and in 1884 Carroll began growing rice to supplement his sugar crop. By 1886, sugar production at the plantation had ceased entirely. Carroll became one of the largest rice planters on the East Bank during the 1880s. Rice production continued at Virginia until at least 1890, when Bouchereau and Bouchereau stopped listing rice planters in their annual report and Virginia Plantation disappeared from the record.

In 1896, Simon Leblanc took ownership of Virginia Plantation, and once again began growing sugar on the land. Under Leblanc, and later the Berthelot Bros., sugar production at Virginia Plantation continued into the twentieth century. The annual sugar reports indicates that the production pattern of Virginia Plantation closely paralleled that of both the reach and state (Champomier 1844-1862; Bouchereau and Bouchereau 1868-1917).

As these data indicate, Site 16IV152 probably is derived from activities and occupation at Virginia Plantation during the mid to late nineteenth century. However, too little of the site remains to allow conclusions to be drawn about its nature; virtually all the site has been lost to the river through bankline erosion and redeposition.



St. Gabriel Site 2 (16IV153)

Site 16IV153 was identified during the pedestrian survey by the presence of coal and brick along the eroding bankline of the Mississippi River, in Township 9 South, Range 1 East, Section 45, at River Mile 197.5. The bankline scatter extended over a 153 m linear area between Levee Stations 1647 + 68.90 - 1652 (Figure 28).

The topography in this area is highly irregular due to the presence of an earthen berm, a relic levee, and adjacent borrow pits. The bankline in this locale was approximately 2 m above the river level, which was 8.2' at the Carrollton Gauge at the time of survey (March 23, 1988). In addition, a ca. 1880 man-made levee is located 5 m from the edge of the bankline; it is approximately 2 m higher than the edge of the bankline, its landward profile descending steeply behind the levee into the flooded borrow pit. Recordation of Site 16IV153 began with the placement of an arbitrary datum in the center of the site area. A 1 m wide bluff profile then was excavated; a subsurface historic cultural stratum, Stratum III, was identified in this profile between 1.10 m - 1.30 m below the surface at the bluff edge (Figure 29). Sediments in this stratum consisted of a 5Y 4/1 dark gray silt clay loam. This stratum was overlain both by natural overbank silty clay deposits and by almost a full meter of sediments which appear to be the result of man's modification of the site area. The amorphous character of the uppermost stratum indicates post depositional disturbance to the area.

Additional site testing was conducted in order to define the limits and the integrity of the buried cultural zone. A total of 12 auger tests were excavated to a depth of 2 meters along three rays at 50, 140, and 210 degrees from datum (Figure 28). Seven of these tests produced artifacts; five tests on the river side of the old levee reveals the presence of a nearly horizontal cultural stratum. Auger testing on the landward side of the old levee did not locate any intact cultural deposits. Brick and coal fragments were recovered within the first 50 cm of the last two auger tests on the 210 degree ray; these appear to represent inclusions from levee construction or borrow pit excavation.

Shovel testing was conducted along the lower bankline between the bluff and the water's edge. While artifacts were present in all three shovel tests, their weathered condition indicate that deflation and redeposition have occurred. Artifacts were collected from the eroded surface of the site, as well. While the majority of these artifacts consisted of brick rubble and coal, metal hardware and historic ceramic sherds were present in lesser amounts.

Further testing at 16IV153 included two 1 x 2 m test units and two bluff profiles. The test units were placed where auger tests had shown positive results. As a result of bankline erosion, only a small area from the edge of the high bankline to the old levee was available for testing. Test Unit 1 was located just below and in front of the old levee (Figure 28). Test Unit 2 was located close to Unit 1, but was lower in elevation. Test Unit 1 was excavated in 20 cm levels to 1.8 m below surface. The first five levels, to 1 m below surface, produced no artifacts whatsoever. The soil was primarily silt originating from flooding episodes. Level 6, from 1.0 to 1.2 m below surface, contained sparse fragments of coal within a silt matrix. The next level, from 1.2 - 1.4 m below surface, was devoid of artifacts. Level 8, from 1.4 - 1.6 m below surface, contained a sparse distribution of brick fragments, coal, and a few fragments of oyster shell, in a 10YR 3/3 dark brown compact silty clay. The last level, from 1.6 to 1.8 m, also had a sparse distribution of brick and coal fragments in its superficial aspect, while the bottom of the level was void of artifacts. The profile of this unit (Figure 30) demonstrated no definitive cultural strata or lenses; rather, a scatter of coal and brick fragments was present in Strata I and II. Stratum I was composed of a 10YR 5/3 brown silt and Stratum II was composed of a 10YR 4/3 dark brown silty clay. Stratum III consisted of a 10YR 3/3 dark brown clay; as noted above, it contained no artifacts.

Excavation Unit 2 was located on a gentle slope above the eroding bluff edge just downriver from Unit 1. This 1 x 2 m unit was excavated in 20 cm levels. Within the first level, a small lens of coal and slag

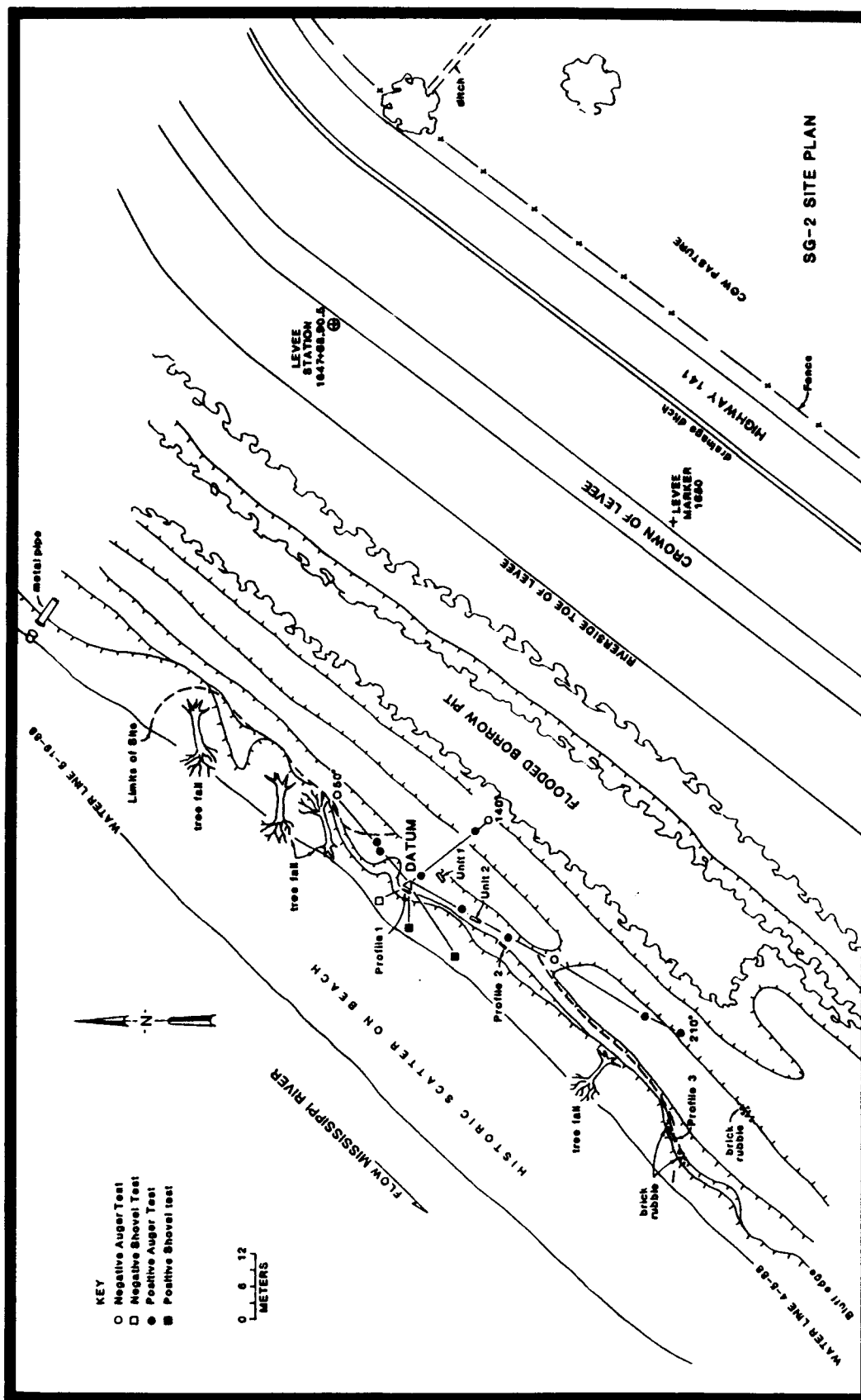


Figure 28. Site plan of 16IV153.

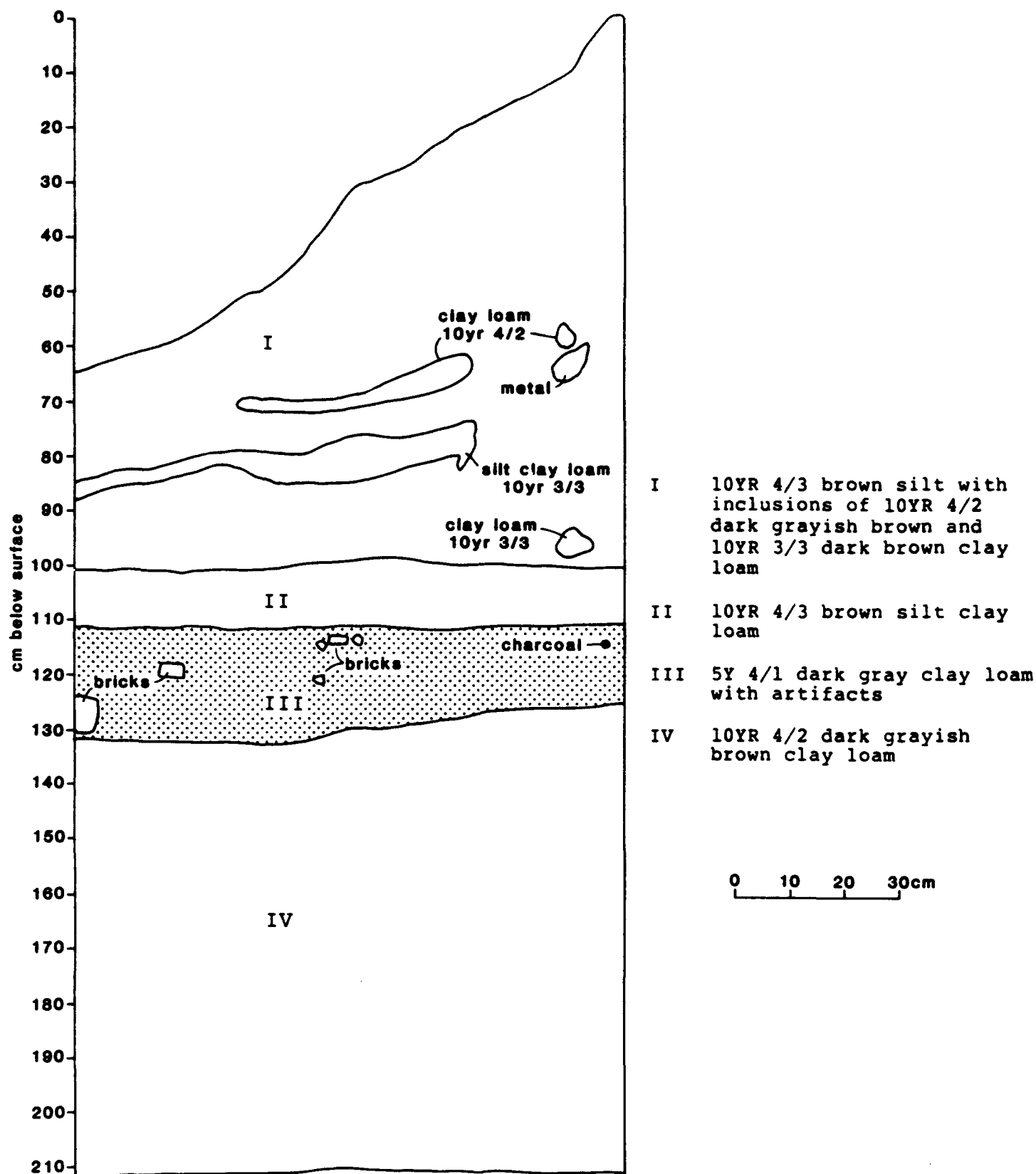
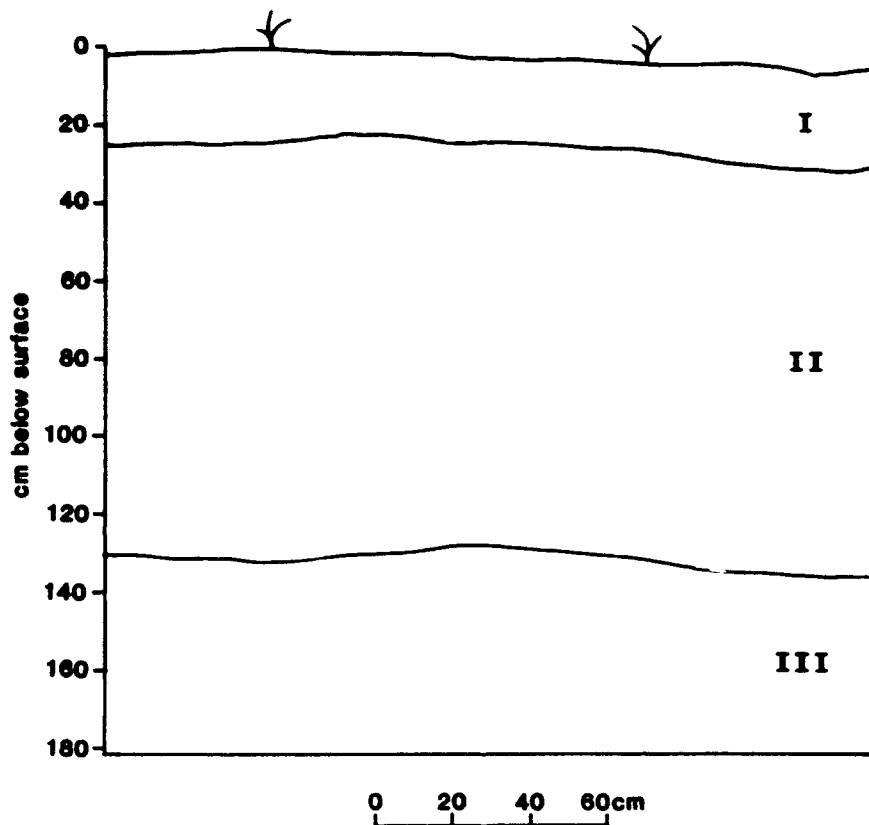


Figure 29. Bluff edge stratigraphic Profile 1 at 16IV153, facing south.



- I 10YR 5/3 brown silt with tiny coal fragments
- II 10YR 4/3 dark brown silty clay with coal
- III 10YR 3/3 dark brown clay

Figure 30. Profile of the east wall of Unit 1 at 16IV153.

was encountered (Figure 31). Although this lens was recorded as a feature, it probably was washed up and deposited during high water. Level 2, from 30-50 cm below datum, consisted of a 10YR 4/3 dark brown silty containing coal fragments. Level 3, from 50-70 cm below surface, contained a 10YR 3/3 dark brown silty clay. The artifact density was sparse, consisting of brick fragments and slag. From 70-90 cm below surface, a level of the same silty clay continued, with a few brick and coal fragments present. The last level, from 90-110 cm below surface, consisted of a 10YR 3/2 very dark, grayish brown silty clay mottled with ferrous oxides. No in situ remains were encountered.

Profile 2 (Figure 32), was excavated downriver from Profile 1, along the bluff edge in the middle of the site. Profile 2 was 1 m wide and 1.9 m deep. Brick fragments and a cow tooth were encountered at one meter below the surface, within a clay loam mottled with ferrous oxides. Also located in this stratum was a concentration of ash and charcoal, with tiny brick fragments within a hard packed clay. This inclusion was about 15 x 15 cm in size.

Profile 3 (Figure 33) was located at the downriver edge of the site. Stratum I, extending from the surface to 30 cm at the highest point, consisted of a 10YR 5/4 yellowish brown silt. Stratum II extended from 30 - 96 cm below surface; it consisted of a 10YR 4/2 dark grayish brown silt clay loam mottled with 10YR 2/2 very dark grayish brown clay containing a few brick fragments. Stratum III was a 10YR 5/3 brown silty clay mottled with ferrous oxides. Stratum IV was composed of a 10YR 3/1 very dark gray clay mottled heavily with ferrous oxides. This stratum extended from 1.04 to 1.64 m below surface. The last stratum (V) extended from 1.64 to 2.14 m; it consisted of a 10YR 3/3 dark brown silt clay. The original ground surface could not be located due to the absence of a cultural lens. Rather, the brick fragments were scattered within a thick 65 cm stratum that probably resulted from anthropogenic modification of the site during levee construction.

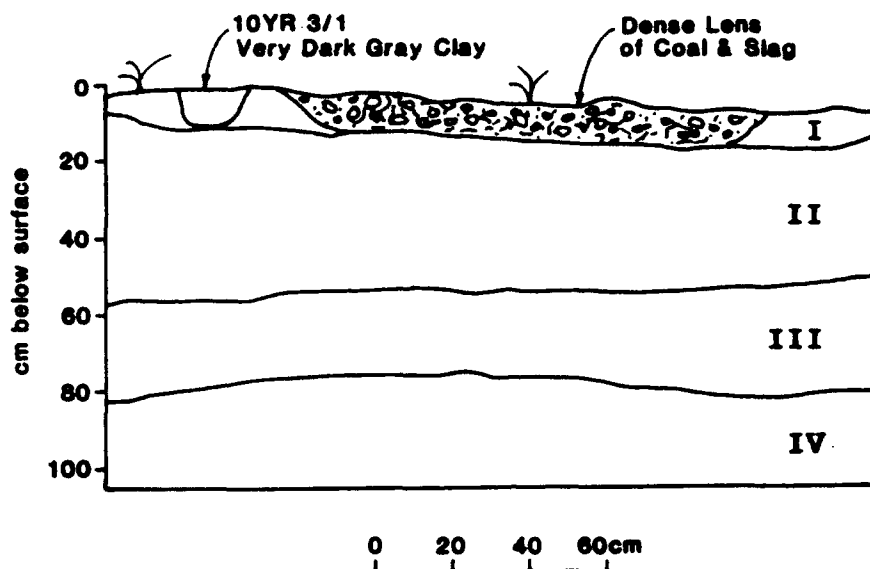
As a result of these investigations, Site 16IV153 was determined to be a linear subsurface historic lens of brick and coal. This linear site extends approximately 150 m along the bankline and does not exceed 5 m in width. Subsurface cultural remains are eroding from the bank at a depth of 1.1 to 1.3 m. A few artifacts were present on the washed out terrace and on the cutbank. In profile, natural overbank sediments overlay the brick lens. No features were present at this site, which has lost its integrity and most of its extent to the river through erosion.

Research indicates that Thomas Estevan who also was associated with 16IV152, was the original claimant of Section 45 in 1803. He died in 1828 and was buried at the St. Gabriel Catholic Church. Apparently, the river has long since claimed the part of the cemetery where he was interred (Riffel 1985:121). His limited holding would indicate little cultivation beyond the subsistence level on his property.

By 1858, Section 45 had passed from Estevan's heirs to Joseph Walsh, a planter who experienced limited success in the sugar business. Although the 1860 census lists Walsh's property value at \$130,000 and 16 slaves (Riffel 1981:29, 145), the sugar production records from 1850 onward list his sugar production as nil (Champomier 1850-1860). Walsh was one of the few planters in the project area to own and use a horse-powered sugar mill.

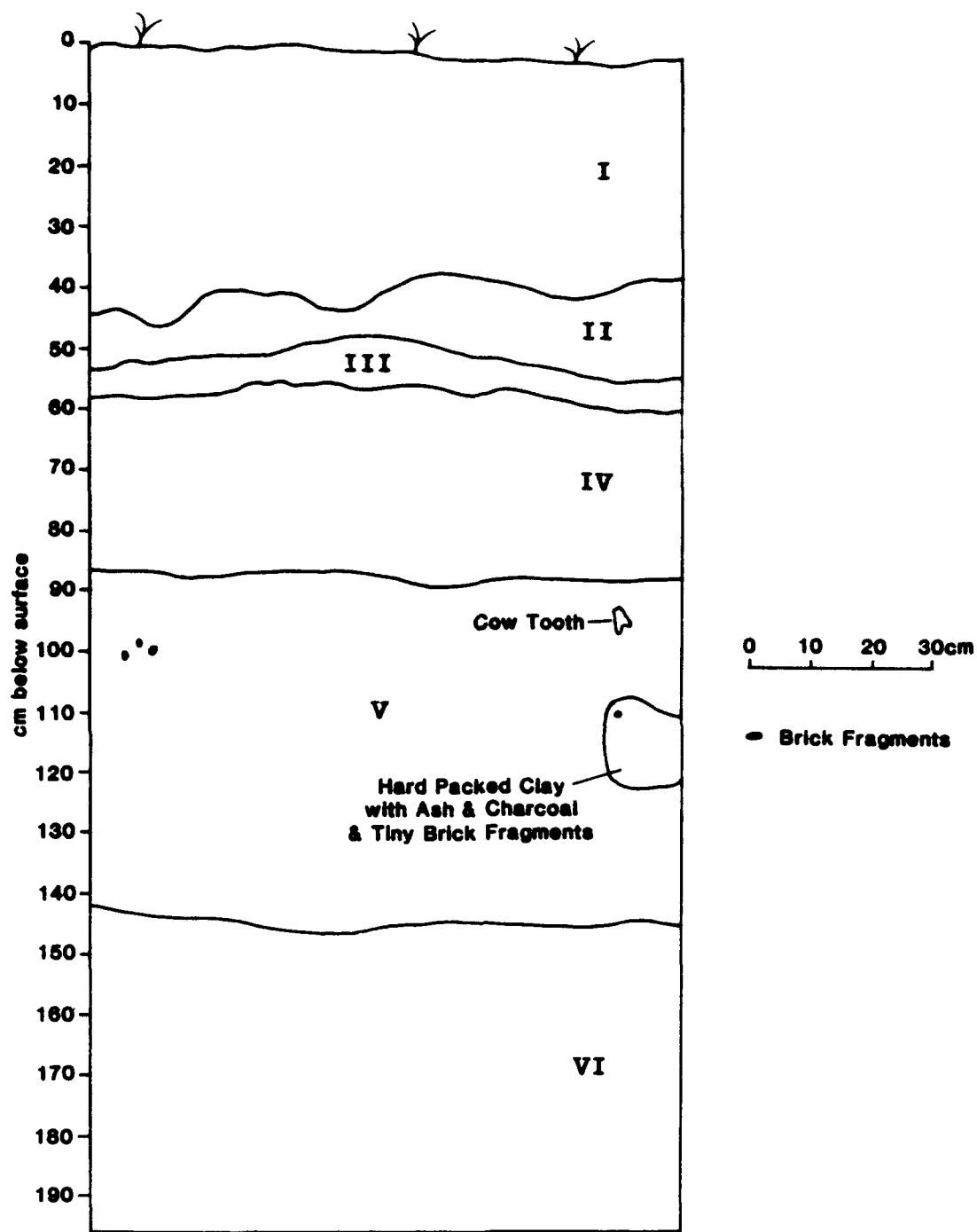
In 1868, Section 45 belonged to Bernard Lorette, a prominent planter and property owner in Iberville Parish. Lorette recorded no production at his property until 1871, when he acquired a portable steam mill and processed 22 hogsheads of sugar. By 1874, the property had disappeared from the sugar production record (Bouchereau and Bouchereau 1872-1874). It is possible that cane harvested from Section 45 was processed elsewhere.

The subsequent owner of the property, Charles A. Brusle, was a captain in the Confederate army, a three-term parish sheriff, a state senator during the postbellum period, and one of the largest landowners on the East Bank of Iberville Parish. The 1860 census listed his holdings at \$160,000 in real estate, \$7,750



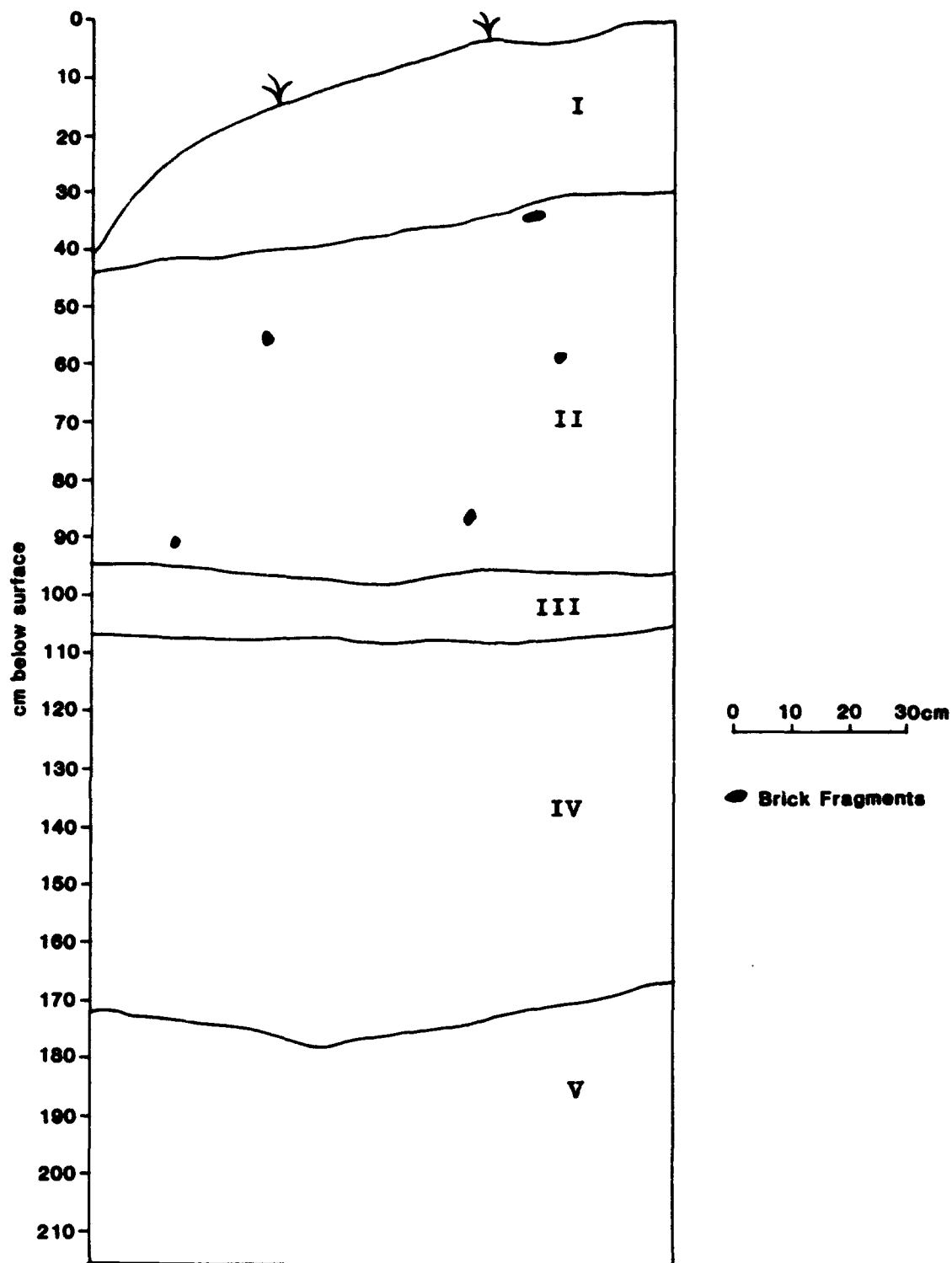
- I 10YR 5/3 brown silt
- II 10YR 4/3 dark brown silty clay
- III 10YR 3/3 dark brown clay mottled with ferrous oxide
- IV 10YR 3/2 very dark grayish brown silty clay mottled with ferrous oxide

Figure 31. Profile of the east wall of Unit 2 at 16IV153.



- I 10YR 5/4 yellowish brown silty clay loam
- II 10YR 3/3 dark brown clay loam mottled with ferrous oxide
- III 10YR 4/3 brown silt
- IV 10YR 3/3 dark brown silty clay
- V 10YR 3/2 very dark grayish brown clay mottled with ferrous oxide
- VI 10YR 3/3 dark brown silty clay mottled with ferrous oxide

Figure 32. Bluff edge stratigraphic Profile 2 at 16IV153, facing south.



- I 10YR 5/4 yellowish brown silt
- II 10YR 4/2 dark grayish brown silty clay loam mottled with 10YR 2/2 very dark brown clay and brick fragments
- III 10YR 5/3 brown silty clay mottled with ferrous oxide
- IV 10YR 3/1 very dark gray clay heavily mottled with ferrous oxide
- V 10YR 3/3 dark brown silt clay

Figure 33. Bluff edge stratigraphic Profile 3 at 16IV153, facing south.

in personal property, and 56 slaves housed in nine structures (Menn 1964:242-3). Brusie acquired Section 45 in 1880, and it became part of Ophelia Plantation, as shown on the Mississippi River Commission Chart of 1879-1880 (Figure 15). The history of Ophelia Plantation after 1880 appears in the following site account.

St. Gabriel Site 3 (16IV154)

Site 16IV154 was identified initially as a discontinuous linear scatter of artifacts eroding out of the bankline between river mile 197.0 - 197.2, near Levee Station marker 1680. The site is located in Township 9 South, Range 1 East, Section 47, downriver from a landing known historically as "Ophelia Landing." A drainage canal and sluice at the upriver limit of the site also may be associated with this site (Figure 34). A 1 m wide bluff profile at the site indicated that brick, bone, metal (such as machinery parts), ceramics sherds, and glass fragments were eroding from a lens originating 1.16m below the top of bank (Figure 35). This zone was buried beneath a series of regular overbank deposits (Figure 35).

Investigations to determine the extent of the site began with the placement of numerous 2 m deep auger testing. Because of the length of the site, primary and secondary datums were established to maintain horizontal and vertical control. Eleven auger tests were conducted along 60, 120, and 180 degree azimuths from the primary datum. Brick and coal were present between 160 and 175 cm below ground surface at the primary datum. Tests at 15 and 20 m along the 180 degree line contained bits of ceramic, brick, and coal at 160 cm below surface. Tests at 10, 20, and 25 m along the 60 degree line yielded brick and coal fragments from 130 to 180 cm below surface.

Auger test rays also were established at 50, 120, and 180 degree azimuths from a secondary datum located 45 m upriver from the primary datum. Nine tests were completed around the secondary datum. Brick, coal, and metal fragments were identified between 140 - 160 cm below surface in three tests along the 50 degree azimuth. Testing along the 180° azimuth and at the secondary datum produced brick fragments between 150 and 180 cm below surface.

Additional testing at this site included the excavation of nine backhoe trenches and two hand excavated test units (Figure 34). The backhoe trenches were used both to examine stratigraphy and to determine the presence or absence of structural remains. These trenches were placed throughout the site where positive auger tests had revealed the presence of deeply buried cultural remains. Visual inspection of the bankline also was used to help determine the placement of the trenches.

Backhoe Trench 1 was located 6 m from Datum 2, just landward of a large machine gear observed eroding from the bankline (Figure 34). This trench was excavated to 2.1 m below surface and was 5 m in length (Figure 36). Brick fragments were encountered at 1.2 m to 1.6 m below surface. A thin horizontal lens of dense coal fragments and dust surmounted the brick, separating the overbank sediments from the original ground surface, or buried A horizon. The brick fragments were located within a 10YR 3/1 very dark gray clay which appears to have been an historic ground surface. More recent flood plain overbank sediments top this stratum.

Backhoe Trench 2 was placed 23 m downriver from Trench 1, parallel to the river but closer to the bankline. This trench was 5 m in length and 1.7 m deep (Figure 37). Stratum I consisted of a 10YR 4/3 dark brown sandy silt extending from surface to 64 cm. Stratum II consisted of a thin layer of 10YR 3/2 very dark grayish brown clay from 64 to 70 cm below surface. Below that, from 70 to 82 cm below surface, was a layer of 10YR 5/3 brown silt. Stratum IV was a 10YR 3/3 dark brown clay extending from 82 cm to 1.24 m below surface. Stratum V was composed of a 20 cm thick level of 10YR 3/2 silty clay. The bottom stratum (VI) was the original ground surface. It was a 10YR 4/2 dark grayish brown clay with coal and brick fragments. Just on top of this stratum was the same dense coal lens observed elsewhere at the sites, which marked the interface between the original surface and the overbank deposits.

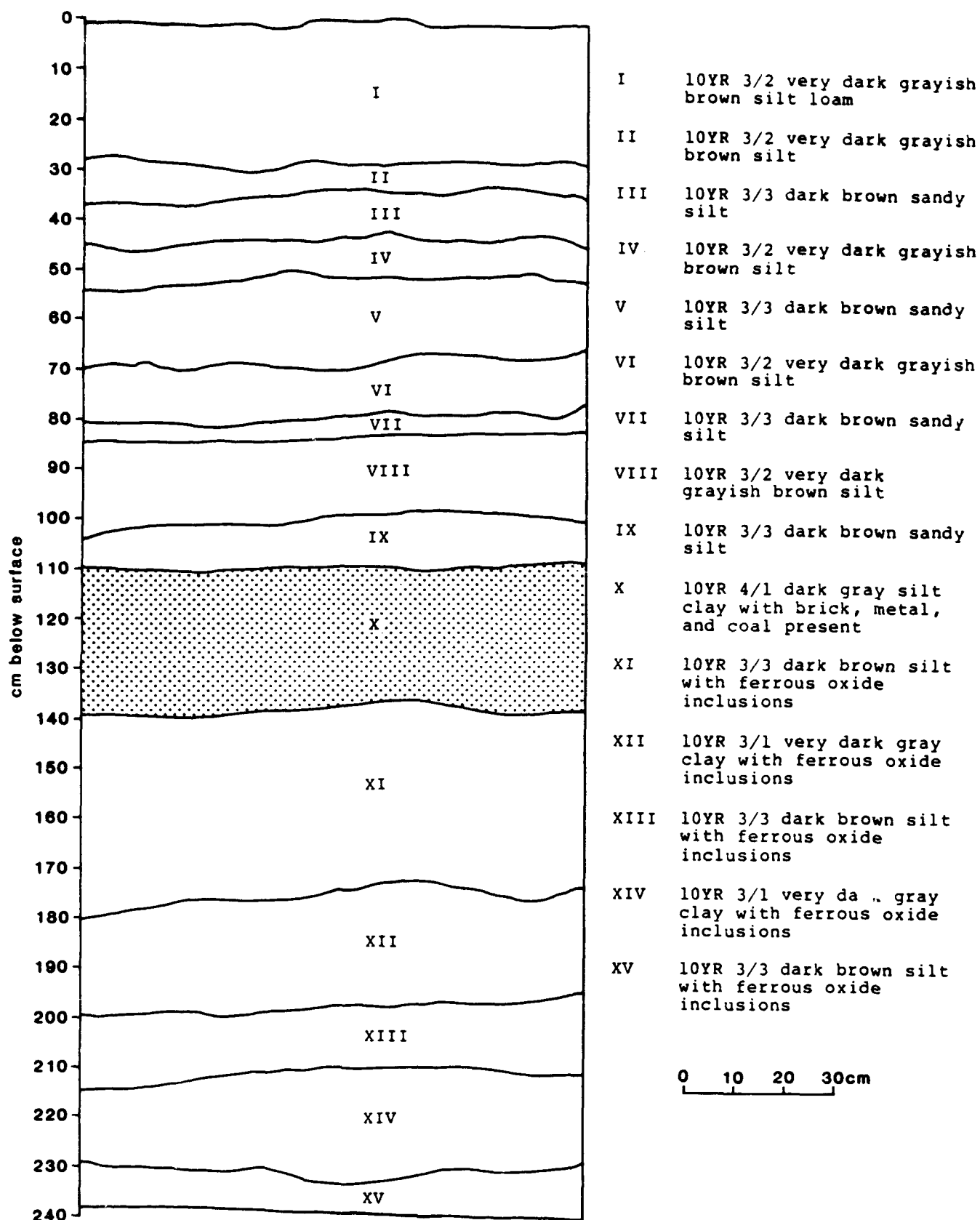


Figure 35. Bluff edge stratigraphic Profile 1 at 16IV154, facing east.

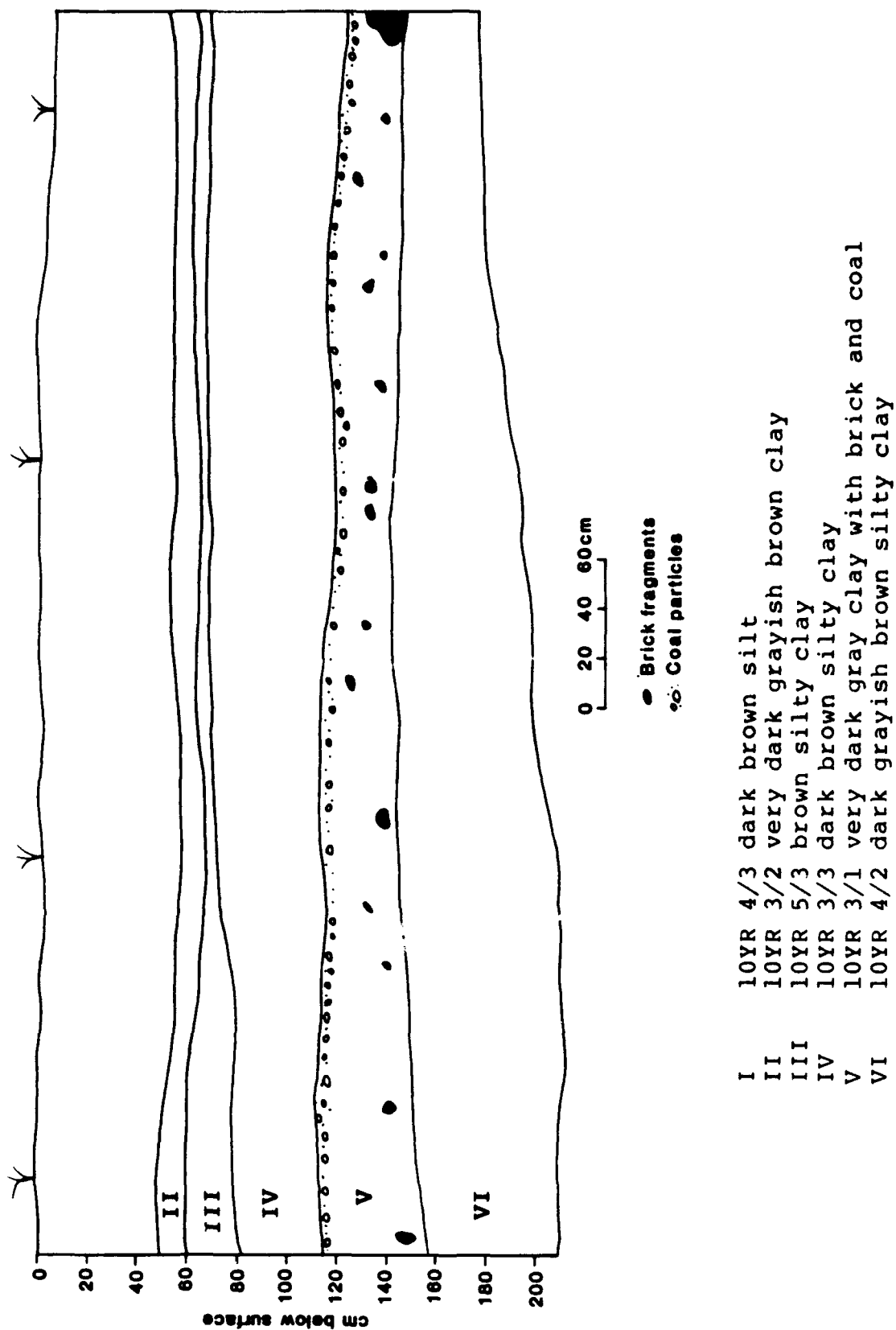
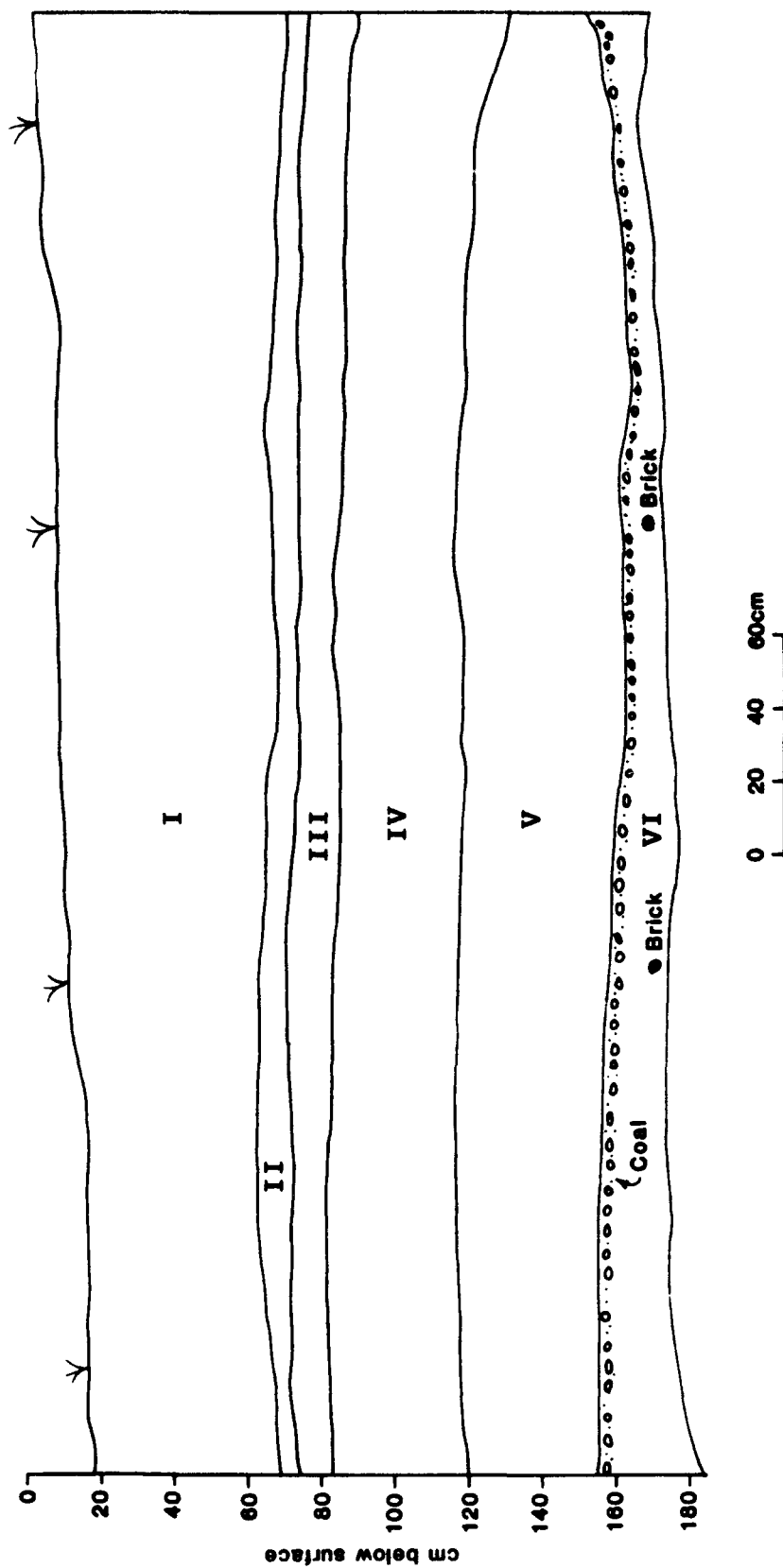


Figure 36. Stratigraphic profile of the northwest wall of Backhoe Trench 1 at 16IV154.



- I 10YR 4/3 dark brown sandy silt
- II 10YR 3/2 very dark grayish brown clay
- III 10YR 5/3 brown silt
- IV 10YR 3/2 dark brown clay
- V 10YR 3/2 very dark grayish brown silty clay
- VI 10YR 4/2 dark grayish brown clay with coal, slag and brick fragments

Figure 37. Stratigraphic profile of the northwest wall of Backhoe Trench 2 at 16IV154.

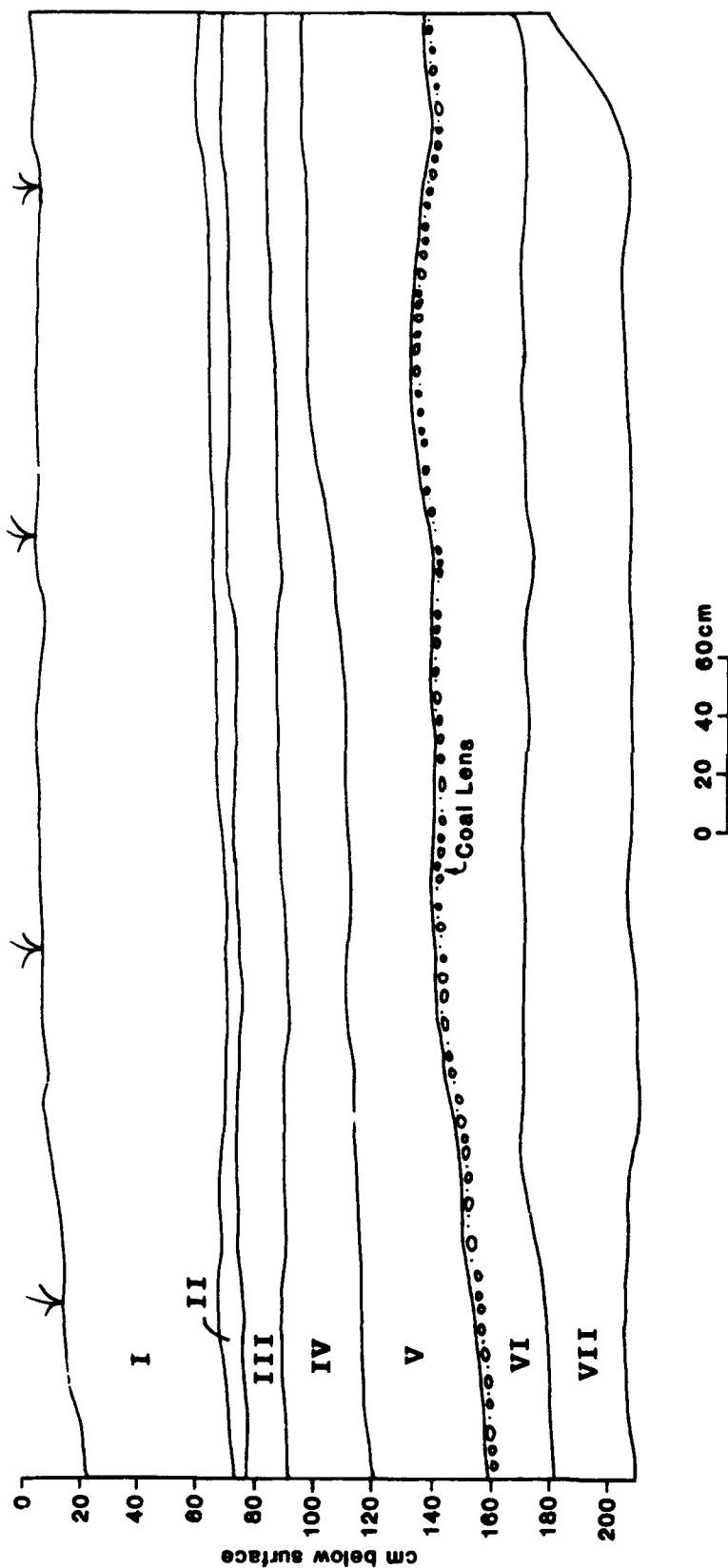
Backhoe Trench 3 was excavated 24.2 m upriver from the secondary datum. This trench was 5 m in length and ran parallel to the river; it was excavated to 1.9 m below surface (Figure 38). Auger tests had indicated cultural remains in this area. The top stratum consisted of a 10YR 5/3 brown silt loam from surface to 60 cm. A thin band of 10YR 3/2 very dark grayish brown clay (Stratum II) was present below Stratum I. Stratum III was a layer of 10YR 5/3 brown silt from 66 to 80 cm. Stratum IV was a 10YR 3/2 very dark grayish brown clay mottled with ferrous oxides; it extended from 80 to 94 cm below surface. Below it was a 10YR 4/3 dark brown silty clay layer (Stratum V). The next Stratum (VI) was the cultural lens, it consisted of a 10YR 3/1 very dark gray clay loam topped by a dense coal dust lens. In profile, it appears that this coal lens was deposited when the original surface was flooded; the coal is size sorted, with the heavier load, i.e., the coal fragments, having been deposited on top of the clay loam first, with dust on top of it.

Backhoe Trench 4 was excavated perpendicular to the river; it began 1.93 m from Datum 1, which was situated on the edge of the bankline, and extended 8 m away from the river towards the borrow area. The trench was placed in this location because of the presence of artifacts eroding from the nearby bankline. Stratum I consisted of a 10YR 4/3 dark brown clayey silt devoid of artifacts. This stratum extended from the surface to 1.6 m below surface; it consisted of overbank sediments with little internal stratigraphic differentiation. Stratum II consisted of a 10YR 3/2 very dark grayish brown clay loam containing brick and a thin lens of coal just above a cypress board feature (Figure 39). The area around the feature was hand excavated. Brick was encountered around the feature, mainly at the level of the boards and below. A scattering of brick was found throughout the floor of the trench up to the area of the boards. The brick fragments were dense, but were not articulated; they constitute fill, rather than a brick floor. This trench was excavated to 1.9 m in depth and was 8 m long. At first, this feature was thought to be a house floor; further testing disproved this theory. The feature was shown to have a linear configuration, which is discussed below with reference to Trench 9 and Test Unit 1.

A 1 x 2 m test excavation unit was placed 1 m north of Trench 4 to determine the extent of the board feature there. Since the depth of the boards was known, this unit was excavated in natural strata by examining the profile from Trench 4. The top 1.7 m of soil consisted of a silt from overbank deposition; this was removed as one level, with the backdirt carefully examined for artifacts. No artifacts were encountered. Once the level of the original surface was reached, it was taken out as Stratum II, to the bottom of the board feature. This level was defined clearly by the presence of the dense coal lens, by the hard clay loam in which it was situated, and by the brick fill below the boards. The feature was cleaned carefully and drawn (Figure 40). The part that was exposed in this unit was a cross tie with 3 planks on top of and perpendicular to it.

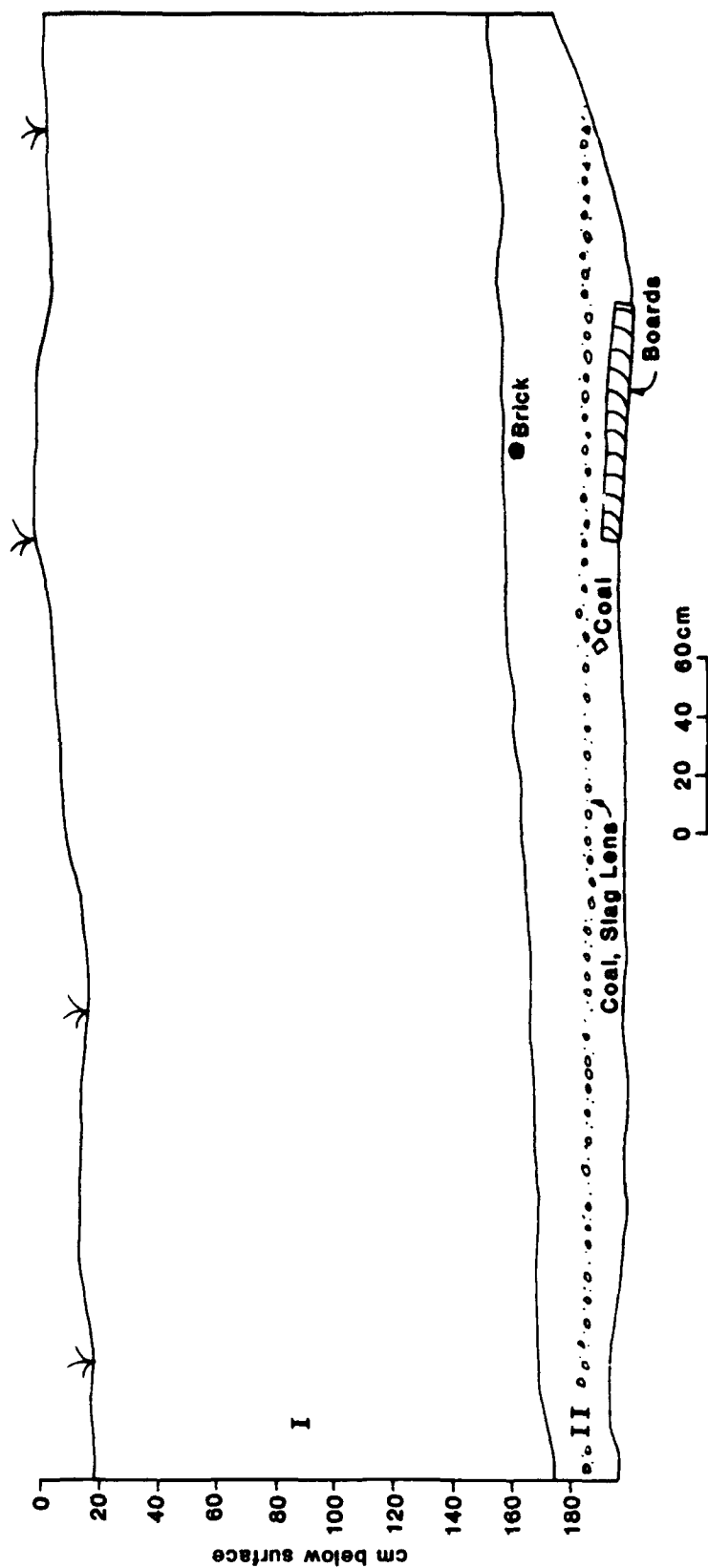
A profile was drawn at Unit 1 (Figure 41). Stratum I consisted of a 10YR 4/2 dark grayish brown silt clay loam; Stratum II consisted of a 10YR 5/3 brown silt containing a small pocket of 10YR 4/3 dark brown silty clay; the third stratum consisted of a silt with a small lens of 10YR 5/2 interbedded sand; the fourth stratum was a 10YR 4/2 dark grayish brown silty clay mottled with ferrous oxides; Stratum V also was a dark brown silty clay (10YR 4/3); Stratum VI consisted of a 10YR 3/2 very dark grayish brown clay mottled with ferrous oxides; Stratum VII consisted of a thin lens of 10YR 5/3 brown sand; a small lens of silty clay made up Stratum VIII; and the last stratum, which was overlain by the thin but dense lens of coal and coal dust, consisted of a 10YR 3/2 very dark grayish brown clay loam. Underlying this clay loam and brick was a sterile clay.

Trench 5 was excavated perpendicular to and 2 m southwest of Trench 4 to determine whether or not the exposed board feature extended to that area. This 5 m long trench was excavated to 2.2 m below surface. However, no evidence of the board feature was found. The stratigraphy of this trench resembled nearby units (Figure 42), with the buried surface distinguished by a coal lens cap and by a sparse scattering of brick. Stratum I consisted of a 10YR 4/3 dark brown silty clay that extended from the surface to 1.6 m below surface. A thick lens that contained cultural materials was observed within Stratum I. This lens, which



- | | |
|-----|--|
| I | 10YR 5/3 brown silt |
| II | 10YR 3/2 very dark grayish brown clay |
| III | 10YR 5/3 brown silt |
| IV | 10YR 3/2 very dark grayish brown clay mottled with ferrous oxide |
| V | 10YR 4/3 dark brown silty clay |
| VI | 10YR 3/1 very dark gray clay with coal lens |
| VII | 10YR 3/3 dark brown silty clay |

Figure 38. Stratigraphic profile of the northwest wall of Backhoe Trench 3 at 16IV154.



- I 10YR 4/3 brown clayey silt
- II 10YR 3/2 very dark grayish brown clay loam with brick,
gravel, coal, boards, slag and 1 pecan shell

Figure 39. Stratigraphic profile of the northeast wall of Backhoe Trench 4 at 16IV154.

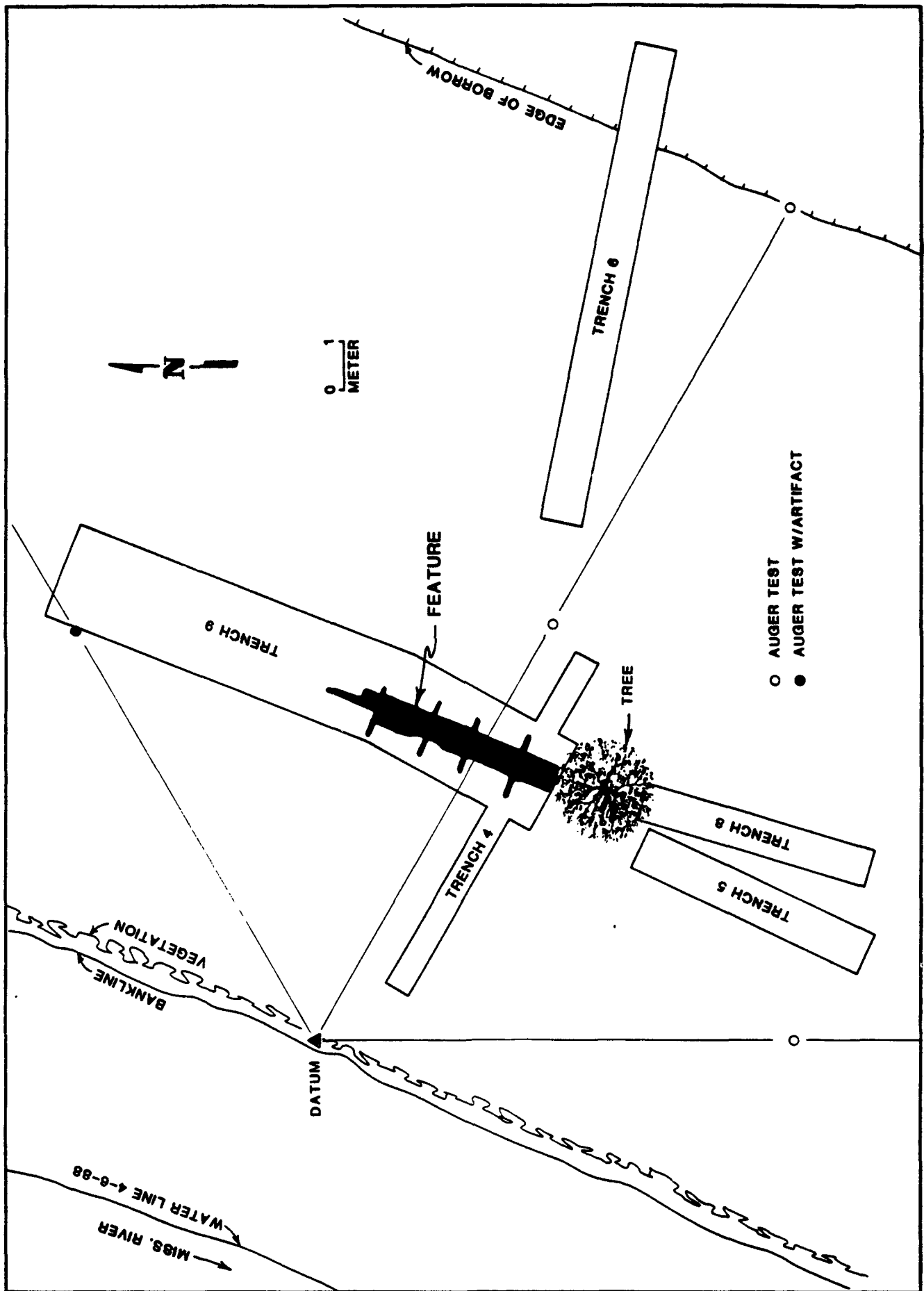
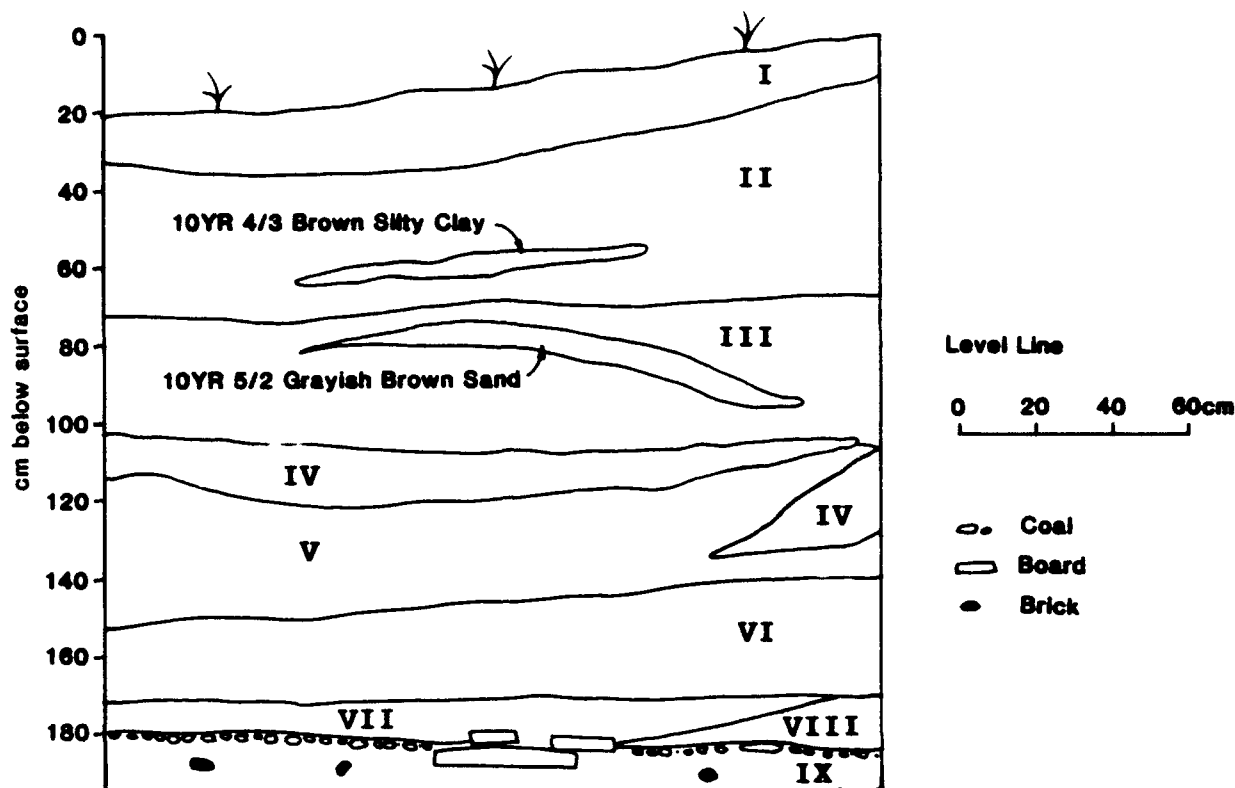
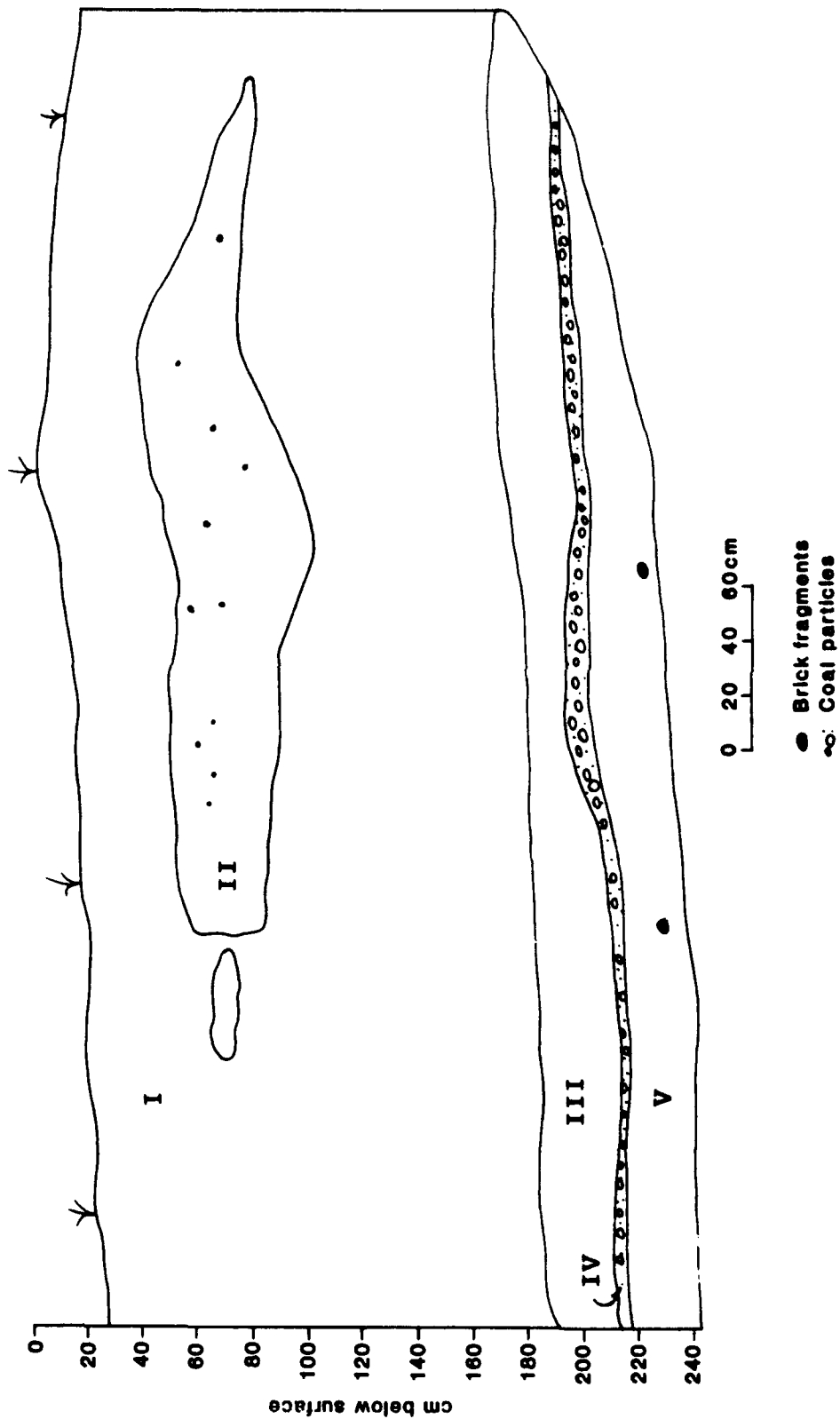


Figure 40. Enlargement of 16IV154, showing the location of Feature 1 and backhoe trenches.



- I 10YR 4/2 dark grayish brown silt clay loam
- II 10YR 5/3 brown silt
- III 10YR 4/3 dark brown silt
- IV 10YR 4/2 dark grayish brown silty clay mottled with ferrous oxide
- V 10YR 4/3 dark brown silty clay
- VI 10YR 3/2 very dark grayish brown clay mottled with ferrous oxide
- VII 10YR 5/3 brown sand
- VIII 10YR 3/2 very dark grayish brown silty clay
- IX 10YR 3/2 very dark grayish brown clay loam containing brick

Figure 41. Profile of the east wall of Unit 1 at 16IV154.



- I 10YR 4/3 dark brown silty clay
- II 10YR 3/2 very dark grayish brown clay with tiny brick and coal fragments, nail
- III 10YR 3/2 very dark grayish brown clay mottled with ferrous oxide
- IV 10YR 3/3 dark brown silty clay with coal
- V 10YR 3/2 very dark grayish brown clay loam

Figure 42. Stratigraphic profile of the southeast wall of Backhoe Trench 5 at 16IV154.

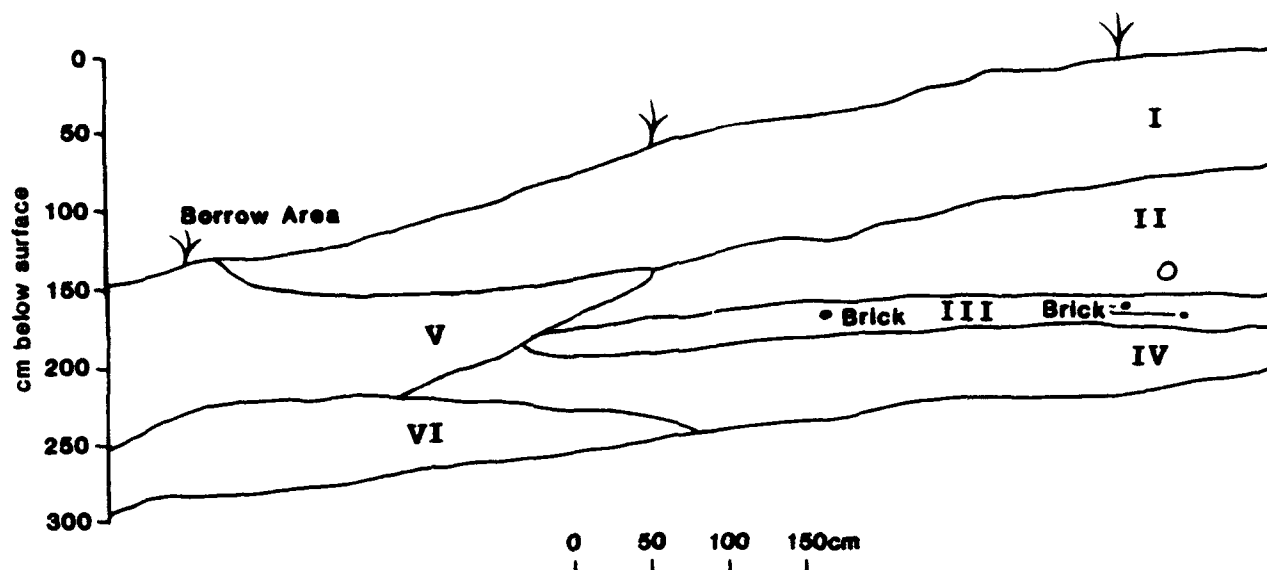
was designated Stratum II, consisted of 10YR 3/2 very dark grayish brown clay with tiny brick fragments and one nail. Stratum III was a 10YR 3/2 very dark grayish brown clay mottled with ferrous oxides. The next stratum was the thin lens of dense coal fragments in a 10YR 3/3 dark brown silty clay, atop the 10YR 3/2 very dark grayish brown clay loam surface. As noted above, the feature was found not to continue in this direction. Rather, it ended underneath the tree growing between the two trenches.

Backhoe Trench 6 was excavated behind Unit 1 (Figure 40). It extended into the borrow. No structural remains were encountered. Brick fragments were found at 2 m below surface, at the head of the trench before it dipped into the lower borrow area. This identifies the limits of the site. Since disturbance of the borrow area occurred in the 1920s and 1930s, and possibly even later, the profile of Trench 6 illustrates that any sites present prior to borrowing were destroyed. The cultural lens does not continue into the borrow (Figure 43).

Within Trench 6, Stratum I consisted of interbedded silty clays ranging in color from a 10YR 3/2 very dark grayish brown to 10YR 4/4 dark yellowish brown. Stratum II was a 10YR 3/3 dark brown clay that extended from 75 cm to 1.75 m below surface. The third stratum contained brick fragments in a very dark grayish brown clay loam (10YR 3/2). However, the coal lens was not visible. Stratum IV consisted of a 10YR 4/2 dark grayish brown clay devoid of artifacts. Strata V and VI were encountered in the borrow pit, where Strata III and IV disappeared. Stratum V consisted of a 10 YR 3/2 clay mottled heavily with ferrous oxides. The stratum below that was a dark brown wet silty clay (10YR 3/3). No cultural remains were encountered in the borrow area.

Backhoe Trench 7 was placed downriver from the other trenches, in a low lying area parallel to the river. This trench was 5 m long; it was excavated to 1.4 m below surface. The top four strata consisted of silts and clays typical of overbank sediments (Figure 44). Stratum V was the same clay loam found in other trenches. The coal lens rested on top of this stratum. The brick encountered in the clay loam was not as dense as it was elsewhere, consisting of only a few small fragments. No brick at all was found in the last 2 m of the downriver end of the trench.

Backhoe Trench 8 was placed parallel to Trench 5 in order to determine if the board feature extended towards the borrow area. This trench was excavated on the downriver side of Trench 4 (Figure 42). The trench was excavated to approximately 2.6 m below surface at its deepest point (Figure 45). No remains of the board feature were encountered. A scattering of brick was located just below the diagnostic coal lens that separates the overbank sediments from the former ground surface. Trench 9 was excavated north from the wall of Unit 1 in order to expose the feature (Figure 46). No remains had been found to the south of trench 4. In Trench 9, the backhoe removed the top 1.75 m of dirt; the balance was excavated by shovel and trowel, so as not to disturb the board feature. The feature was found to consist of eight planks laid in a staggered pattern for a maximum width of 80 cm (3 planks) and a total length of 5.2 m. Individual planks ranged from 20 to 30 cm in width, depending on the amount of decay; they were 1 to 2 cm thick. The planks rested on four badly decayed 10 x 10 cm cross ties. There were spikes in the ends of these cross ties, and spikes and nails were present where the planks and cross ties met. The areas around the spikes at the ends of the crossties were excavated to 25 cm below the boards to examine the construction process and to determine if vertical posts were present. The first 15 cm just below the boards consisted of a dense crushed brick fill foundation; the spikes were anchored into the brick fill. No evidence of vertical posts was found. Below the brick was a culturally sterile clay. Thus, the feature was laid on and anchored to a brick fill built on a clay surface. The brick was also present outside the immediate vicinity of the feature but was not as dense. This feature extended through Trench 9, Unit 1, and Trench 4, but it did not extend much further south than the south wall of Trench 4. It was 5.2 m in length, and it was a top brick fill which was placed on the original ground surface. No other features were encountered in any of the other trenches.



- I 10YR 3/2 to 10YR 4/4 very dark grayish brown silty clay loam
- II 10YR 3/3 dark brown clay
- III 10YR 3/2 very dark grayish brown clay loam with brick fragments
- IV 10YR 4/2 dark grayish brown clay
- V 10YR 3/2 very dark grayish brown clay mottled heavily with 5YR 3/4 ferrous oxide
- VI 10YR 3/3 dark brown wet silty clay

Figure 43 Stratigraphic profile of Backhoe Trench 6 at 16IV154, facing south.

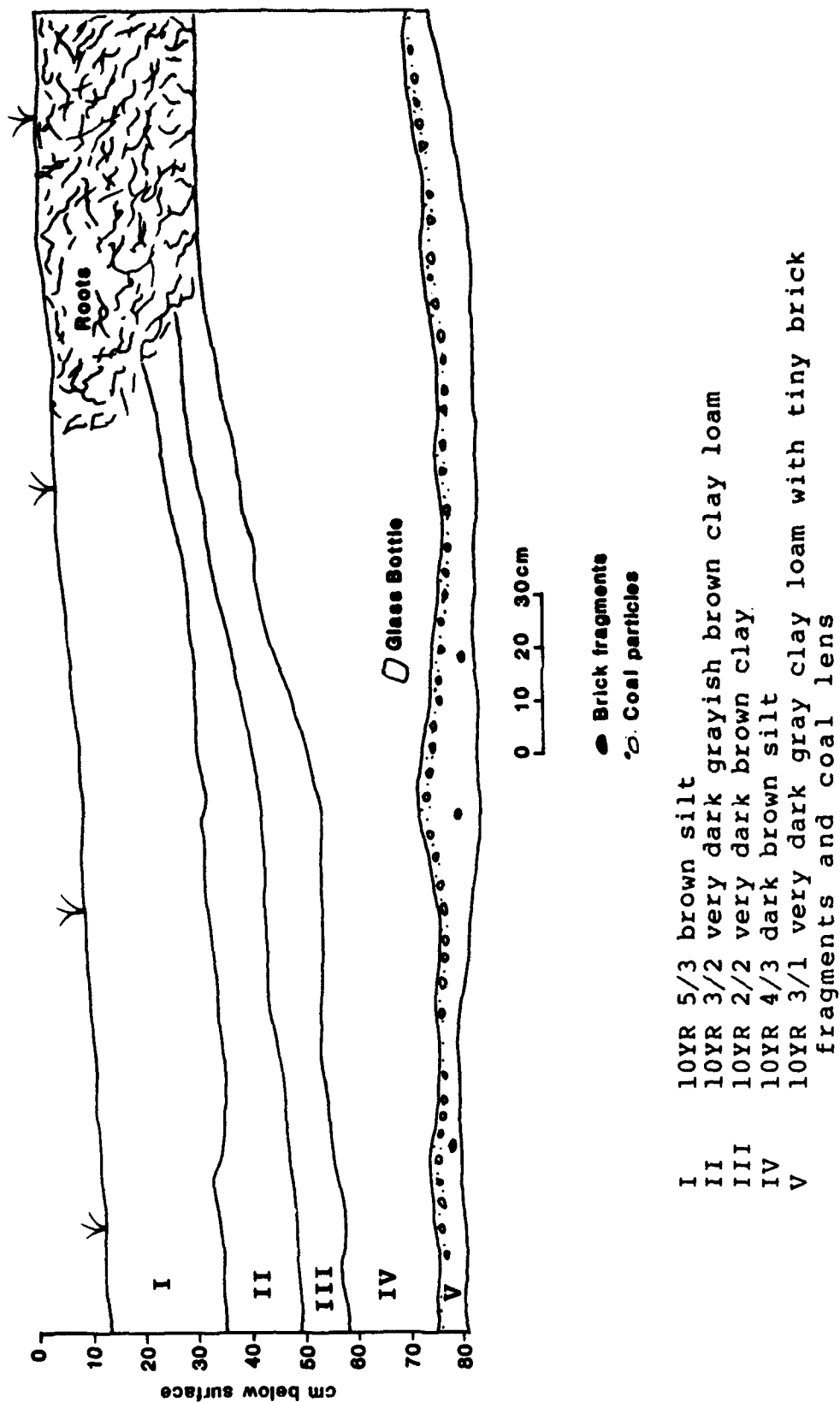
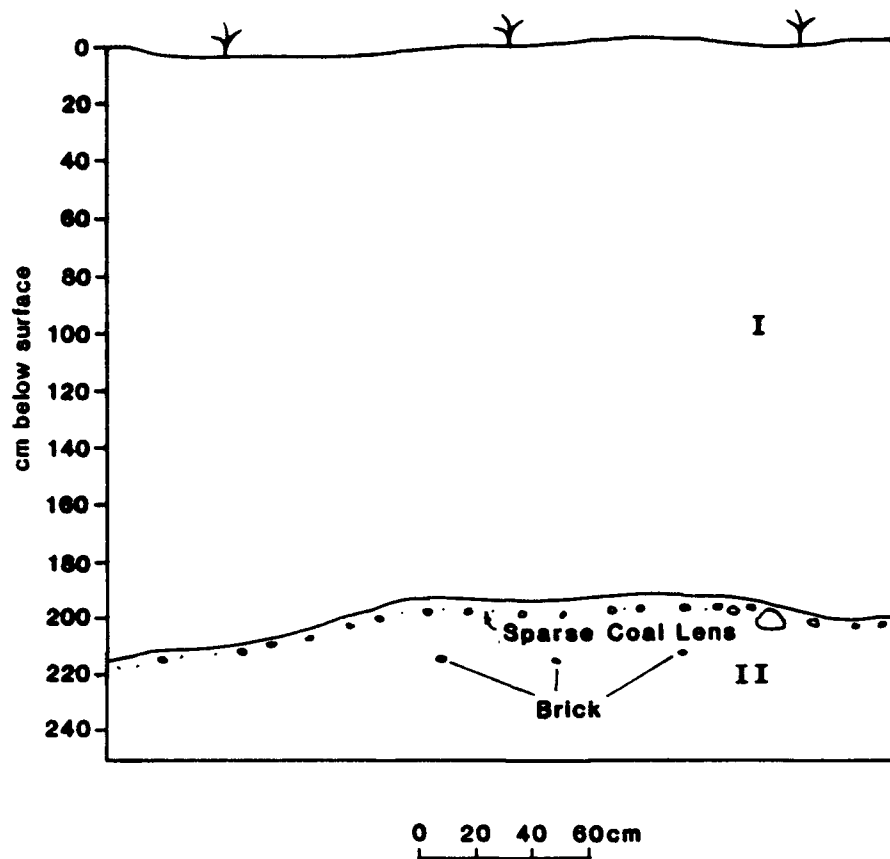
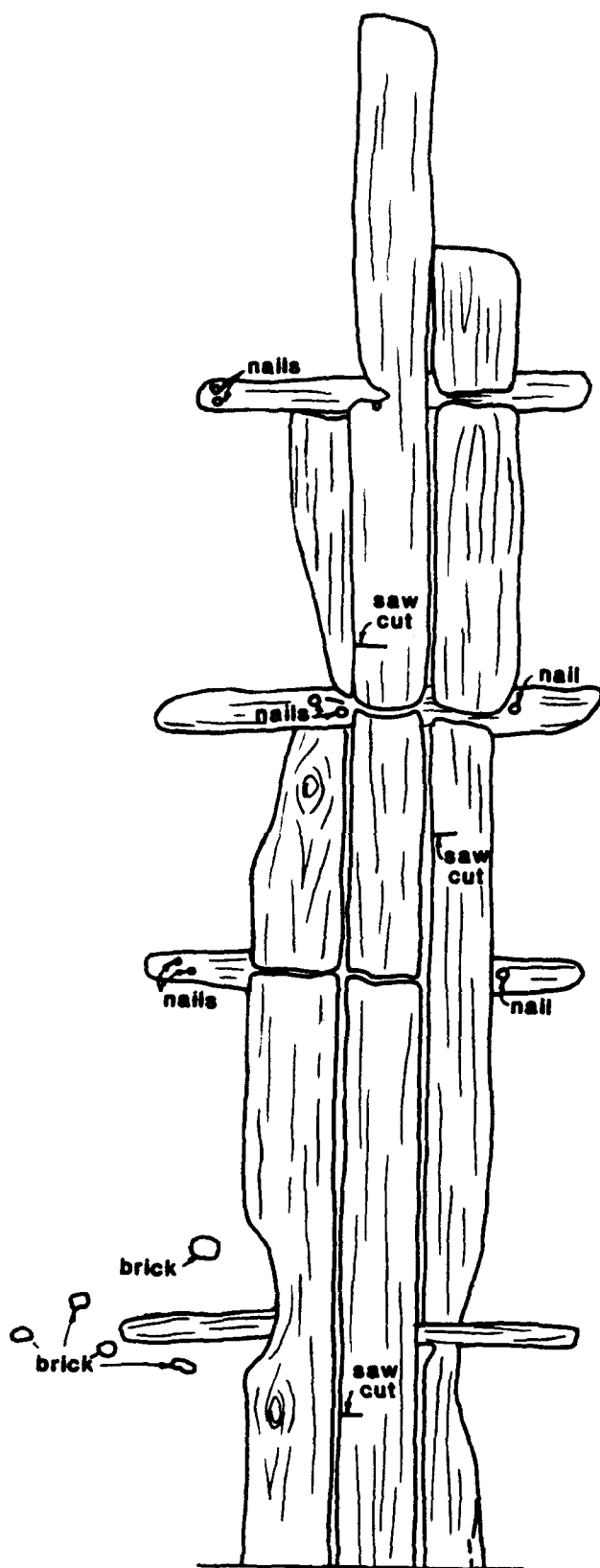


Figure 44. Stratigraphic profile of the northwest wall of Backhoe Trench 7 at 16IV154.



- I 10YR 4/3 dark brown silty clay
- II 10YR 3/3 dark brown clay loam

Figure 45. Stratigraphic profile of the east wall of Backhoe Trench 8 at 16IV154.



0 20 40 60cm

Figure 46. Feature 1 at 16IV154.

Unit 2 was placed near Datum 2 and Trench 1 just landward of the large machine gear (Figure 34). Following removal of the overburden, which extended to 1.1 m below surface, the thin lens of coal fragments was exposed. Under this lens was the clay loam of the original ground surface. Brick fragments were encountered from 1.2 to 1.6 m below surface. Below the clay loam was sterile clay. Brick fragments were scattered throughout the unit; no in situ remains were encountered. The top fourteen strata in Unit 2 represented depositional cycles very characteristic of overbank flooding. Stratum XV consisted of a 10YR 3/2 clay loam containing brick fragments and coal and extending from 1.3 to 1.55 m below surface. The matrix represents a buried A horizon (Figure 47).

The excavation of backhoe trenches at SG-3 (16IV154) elucidated three important aspects of the site and its state of preservation. First, historical archeological remains are deeply buried under 1-2 m of alluvium. Second, lateral bankline migration, levee construction, and borrow pit excavation have destroyed any former standing structures at the site, as well as most of the site itself. Third, artifactual remains are sparse, as a result of the erosion of the site following its abandonment. Stratigraphic profiles from the bluff profile, test unit profiles, and backhoe trenches revealed the presence of a buried lens of cultural residue consisting of brick fragments and coal throughout most of the site. This buried deposit, which is characterized by the presence of the brick and coal fragments, apparently constitutes a buried A horizon. The distribution of cultural remains identified in the excavations and from the recorded profiles suggests horizontally scattered or disturbed refuse, including brick and coal.

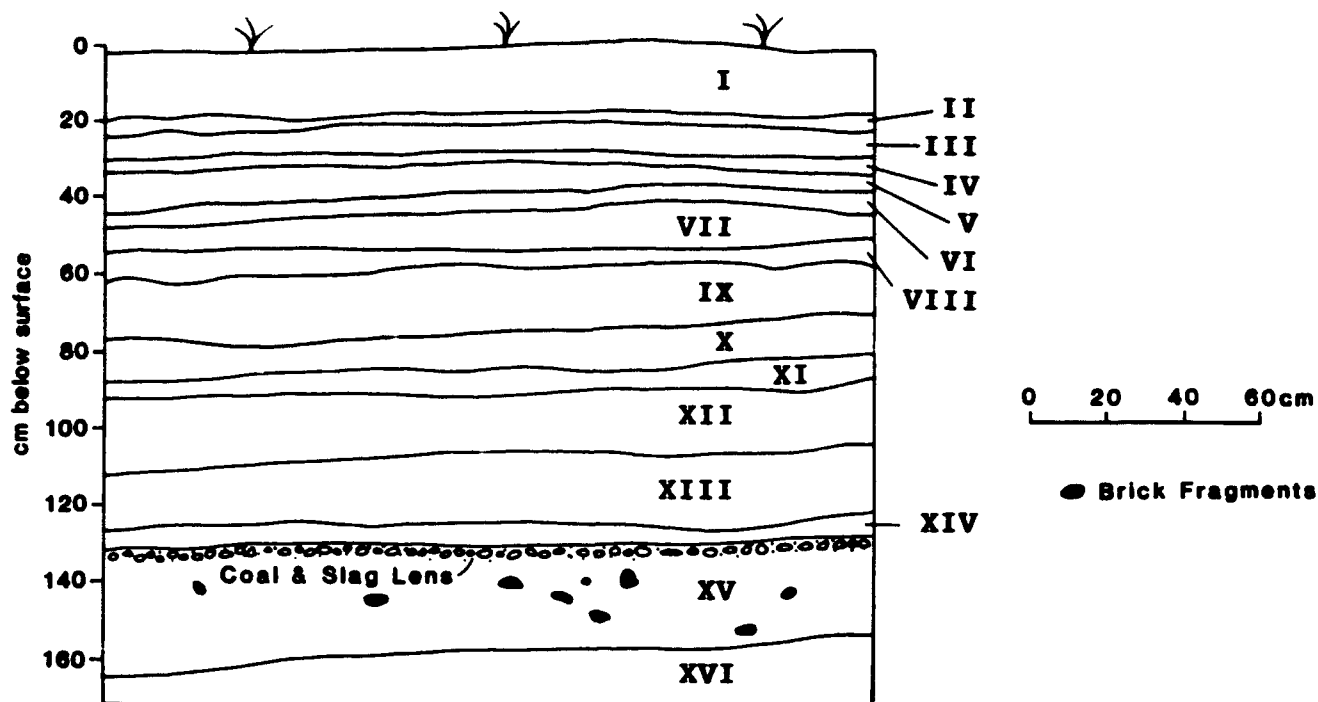
Thus, Site 16IV154 is predominantly a linear scatter of artifacts along the bankline. At its maximum extent, it measures 99 x 24 m. A single subsurface wooden feature with a brick foundation is present between the bankline and borrow area parallel to the river. It is located just downriver from Ophelia Landing. In addition to the cypress plank boardwalk, a large machine gear was observed in the bankline. No other features were found, nor were any significant concentrations of artifacts. The river has eroded much of the site; borrow pits demarcate its landward boundary.

Archival sources indicate that the original grant for what became Section 47 was given to Joseph Landry in 1775 by Spanish Governor Unzaga. The land was claimed in 1803 by Timoleon Lesassier, on the basis of a Spanish land grant of 1775 (Lowrie and Franklin 1834). Lesassier later went on to become the second Mayor of the City of Carrollton (now a part of New Orleans) during the mid-1840s, suggesting that he left Iberville Parish some time prior to his election.

Property containing Section 47 was purchased by Elbert and Linn Woodward of Tennessee on March 31, 1829, at the succession sale of Matilda Rivas, the deceased widow of Timoleon Lesassier. They also acquired "the right of cutting the cypress and oak timber on the land occupied by the widow of Isidore Blanchard. . . ." The Woodwards paid \$25,000.00, exclusive of slaves.

Twenty days later, the Woodwards sold off a portion of this property, including eighteen arpents frontage known as "Saw Mill Plantation," to Rene Arnous. Arnous, in turn, sold part of his holdings to Robert C. Camp on April 21, 1859. Camp's purchase consisted of the eighteen arpents frontage that constituted Saw Mill Plantation (Conveyance Book 6, Entry No. 155 [COB 6, #155]; COB S, #504; COB L, #540; COB L, #480, Iberville Parish Clerk of Court).

During the 1870s, Saw Mill Plantation was sold several times. Robert C. Camp's ownership of Saw Mill Plantation ended at a sheriff's sale on February 16, 1871. The property was purchased by Arthur L. Stewart, a member of the New Orleans firm of Hewitt, Norton and Company, for the company. Mrs. Mary F. Adams, the widow of John Hagan, acquired use of, as well as a lien against, Saw Mill Plantation from Hewitt, Norton and Company in lieu of cash owed to her. On February 19, 1875, Robert W. Dean of New Orleans purchased Saw Mill Plantation in a liquidation sale of Hewitt, Norton and Company, for \$3,000.00. He also paid the lien held by Mrs. Mary F. Adams and her daughter Elizabeth F. Hagan (COB 10, #285; COB 13, Folio 50 [COB 13:50]; COB 13, #216, Iberville Parish Clerk of Court).



I	10YR 4/3	dark brown silt
II	10YR 6/2	light brownish gray silt
III	10YR 4/3	dark brown silt
IV	10YR 6/2	light brownish gray silt
V	10YR 4/4	dark yellowish brown silt
VI	10YR 5/3	brown silt
VII	10YR 4/3	dark brown silt
VIII	10YR 3/3	dark brown silty clay
IX	10YR 4/3	dark brown silt
X	10YR 3/2	very dark grayish brown clay
XI	10YR 4/3	dark brown silt
XII	10YR 3/3	dark brown silty clay
XIII	10YR 3/3	dark brown silt
XIV	10YR 3/2	very dark grayish brown clay loam
XV	10YR 3/2	very dark grayish brown clay with coal
XVI	10YR 3/3	dark brown clay mottled with ferrous oxide

Figure 47. Profile of the east wall of Unit 2 at 16IV154.

On August 3, 1877, Miss Ophelia Brusle purchased Saw Mill Plantation, including all buildings and improvements, from Robert W. Dean. That same day, she purchased two arpents frontage from Robert C. Camp (COB 13, #215 and #216, Iberville Parish Clerk of Court). This land was used for rice and sugar production during the nineteenth and twentieth centuries. Mrs. Brusle's holdings soon included several adjacent sections. Saw Mill Plantation became part of Ophelia Plantation. The first appearance of Ophelia Plantation in Bouchereau's report was in 1880, in which year the plantation produced 3800 barrels of rice.

In 1883, Ophelia Plantation included Sections 46, 47, 48, and 50. These four sections comprised 449 acres (1883 Map of Iberville Parish). Rice production at Ophelia continued into the late nineteenth century, at which time the plantation also began growing sugar. The same Berthelot Bros. who managed Virginia Plantation took over Ophelia in 1896; under their supervision, Ophelia continued to grow sugar cane, though its cane was processed elsewhere.

As stated above, Section 46 also formed part of Ophelia Plantation. This section was claimed in 1803 by Francois Rivas, a citizen who was the last French Commandant of Iberville Parish prior to the incorporation of the Louisiana territory into the United States. According to Norman's Chart, this tract of land formed part of the 1858 holdings of R. C. Camp. Camp lived on a tract further downriver in Iberville Parish. According to census reports, Camp owned 71 slaves in 1840 (Riffel 1981:17,135). In 1850, the number had grown to 95 slaves. In 1860, his real estate was valued at \$425,000 and his personal property at \$17,000. He owned 127 slaves, housed in 11 slave dwellings (Menn 1964:242-3). Camp's holdings were very productive; he grew between 300 and 400 hogsheads of sugar annually during the antebellum period. Camp owned a steam powered, brick and shingle sugar mill, but in 1855 he switched to an open steam train method. In 1855, Camp built Indian Camp Plantation on his downriver property (Section 59); this plantation eventually fell into disuse, and in the early 1900s it was converted into the U.S. Public Health Service Hospital, National Hansen's Disease Center, also known as the Carville Leprosarium (Kane 1939).

Section 52 also eventually formed part of Ophelia Plantation. In 1803, Edmond Capdeville claimed Section 52, on the basis of a grant to Joseph Comon by Spanish Governor Unzaga in 1775. Capdeville purchased Comon's claim through regular sales (Lowrie and Franklin 1834). Persac's map of 1858 (Figure 27) shows Section 52 divided into several small tracts. These parcels probably were owned by small subsistence farmers. If they cultivated sugar or rice during the nineteenth century, their production never was recorded. The Union Wood Yard, owned by B. Allain, also was located within Section 52.

Section 52 was divided repeatedly over the years, and it was broken up into several small farms immediately after the Civil War. However, the Mississippi River Commission maps reveal that by 1879 this tract was also part of Brusle's Ophelia Plantation. In that year, two small structures stood on the land side of the levee. By the early twentieth century, Section 52 was part of one of the largest contiguous land holdings along the Mississippi River, an excellent example of the continuation of the antebellum pattern of land consolidation during the late nineteenth century. By the early twentieth century, virtually all of Point Clair (the lower half of the project area), including Ophelia Plantation, was owned by a single individual. That person was Harry B. Nelson in 1945; Frank Polk owned it in 1953 (Grace 1946:164; Tobin Map, 1953).

Site 16IV154 is located in Section 47, in what was known historically as Saw Mill Plantation, and later as Ophelia Plantation. A landing located just upriver may have been associated historically with activities at the site. The exact nature of the cypress plank feature is not known; however, if there was a sawmill at this location, as the original plantation name implies, it is possible that this feature was associated with sawmill operations. Since the board feature is built on brick fill, which would serve to support, stabilize, and drain it, it may have been a raised path or walkway built to cross a low or wet area. It also could have been built to keep stacked lumber off the ground in some sort of staging area. The machine gear also may have been part of the sawmill machinery.

Very little historical information is available about this plantation. In fact, only indirect evidence is available to indicate that a sawmill might have operated there. Extensive trenching located no archeological features other than the one listed in this report. As a result, the board feature and the machine gear cannot be tied to any structural features, and the site does not have any demonstrable and direct historical associations.

St. Gabriel Site 7 (16IV155)

Site 16IV155 is located opposite Bayou Goula Towhead, on the east (left descending) bank of the Mississippi River between river miles 195.9 and 196.2. The site is located in Township 9 South, Range 1 East, Section 52. The land adjacent to the site and opposite the present levee is owned by the Louisiana State Correctional Facility. Elevations at the site vary from 4.5 - 6 m NGVD. Numerous uprooted trees at the site are indicators of fluctuating river levels (Figure 48).

Observation of the site during survey indicated an artifact scatter approximately 180 m long and confined to the eroded area of the bankline. Site investigations commenced with the establishment of a datum, and with the excavation of a bluff profile (Figure 49). Because of erosion, finding a suitable bank to cut for profiling was difficult. The cleaned profile indicated a lack of cultural remains and heterogeneous sediments.

A series of 2 m deep auger tests were placed along rays at 60, 120, and 180 degrees from datum. These tests produced no cultural remains; the results indicated that artifacts were confined to a surface scatter along the eroded area of the bankline, an area between 10 and 20 m in width. Shovel testing also was conducted along rays at 20 and 200 degrees from datum. Four tests, each 50 cm deep, failed to yield cultural remains or evidence of intact cultural deposits. Artifacts recovered from the surface of the site included ceramic sherds, glass, and metal. A single spoon and a quantity of rusty barbed wire fencing were among the metal artifacts identified at the site. Artifacts from the site date from the early twentieth century.

Site 16IV155 is a linear historic scatter confined to the beach. It is located on a point bar, indicating that the artifacts could have been washed up and redeposited along the beach. The Mississippi River Commission maps show historic structures in this area, but it is likely that borrow activities have destroyed any cultural remains that may have existed prior to the excavation of the borrow pit.

St. Gabriel Site (16IV142)

This site, which originally was recorded by the Denver Service Center, National Park Service (Shafer et al., 1984), is located in Section 57, Township 9 South, Range 1 East, near Levee Station 1449 + 60. The site was identified as a 18 x 21 m area consisting of three cement and concrete foundations dating from the late nineteenth and early twentieth centuries. A small sample of concrete was collected during the National Park Survey. The site was interpreted as representing portions of a ferry dock or launch. Revisitation during 1988 confirmed the location of this site. Testing was undertaken in an attempt to define the relationship of the three features identified during the original NPS survey and to determine whether intact buried cultural deposits were present at the site. Prior to site testing, a datum was established and a site plan was drawn (Figure 50).

A series of 2 m deep auger tests were excavated at ten meter intervals along 0, 50, and 90 degree azimuths originating from datum. Coal and granitic rock fragments were encountered within the first 30 cm of 2.5Y 4/4 olive brown silt at 10 m along the 0° azimuth. Impenetrable metal was encountered within these same sediments at 80 cm below surface in the test at 10 m along the 90° azimuth. All other auger tests produced negative results.

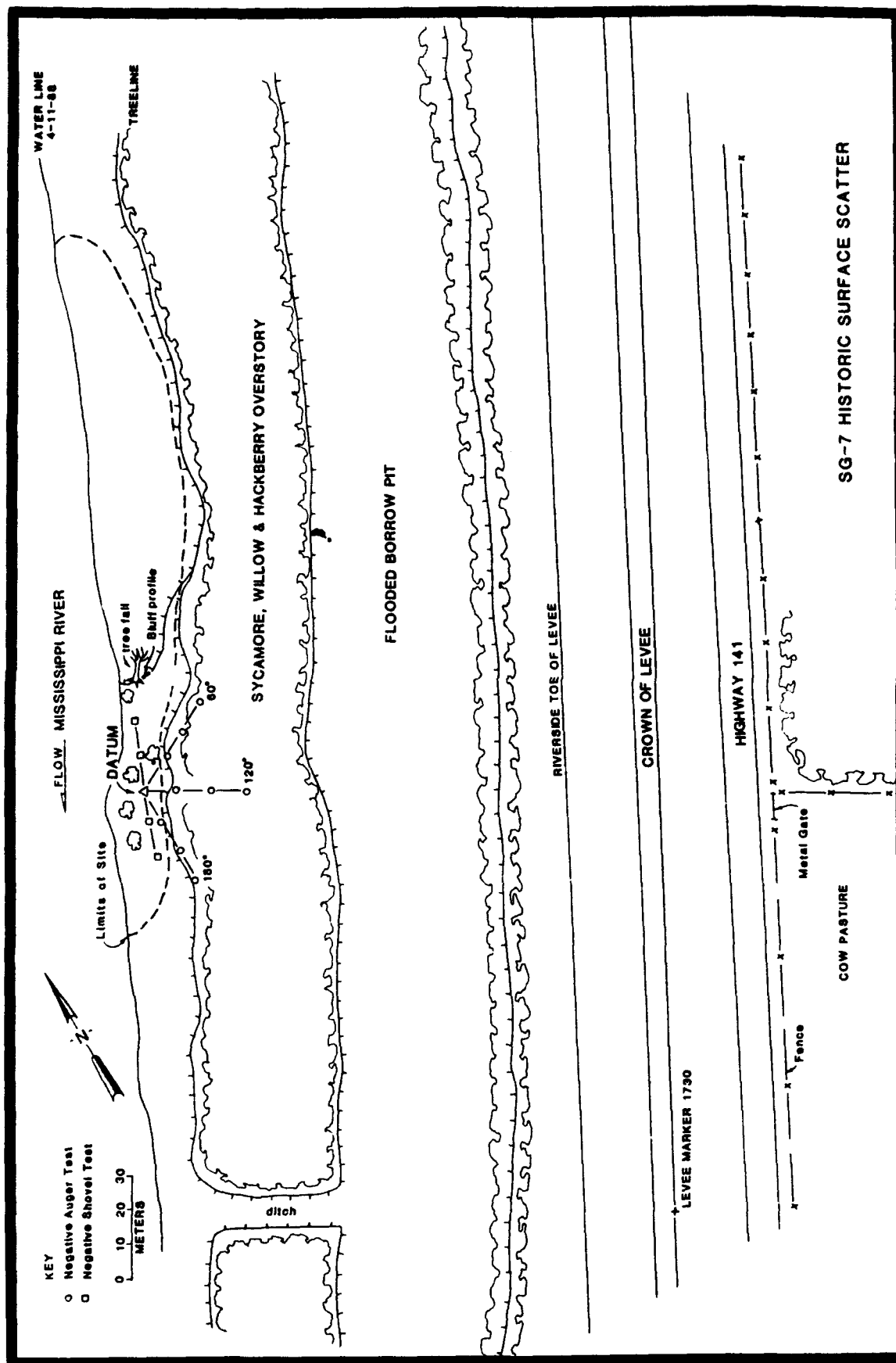
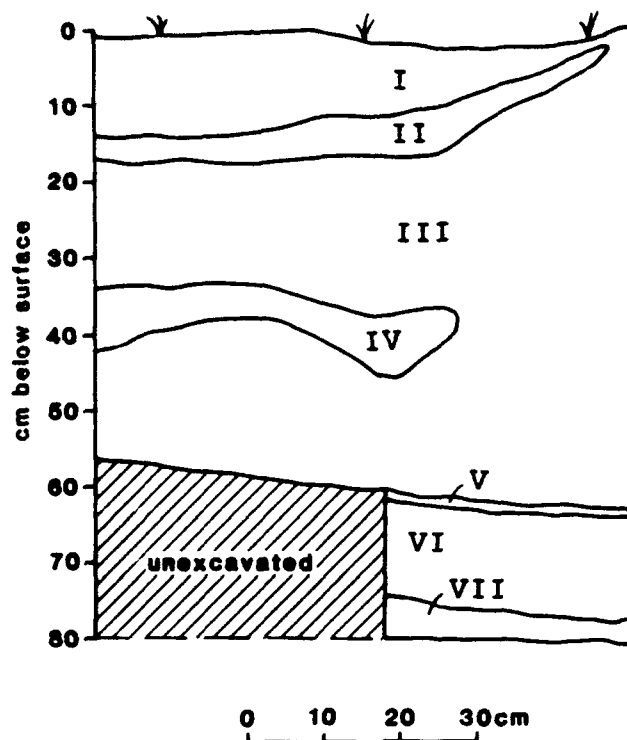


Figure 48. Site plan of 16IV155.



- I 10YR 4/2 dark grayish brown silt
- II 10YR 4/2 dark grayish brown silt clay
- III 10YR 5/3 brown silt loam
- IV 10YR 4/2 silt clay loam mottled with ferrous oxides
- V 10YR 4/2 silt clay loam mottled with ferrous oxides
- VI 10YR 3/2 very dark grayish brown silt loam
- VII 10YR 4/2 dark grayish brown silt loam

Figure 49. Bluff edge stratigraphic profile of 16IV154, facing south.

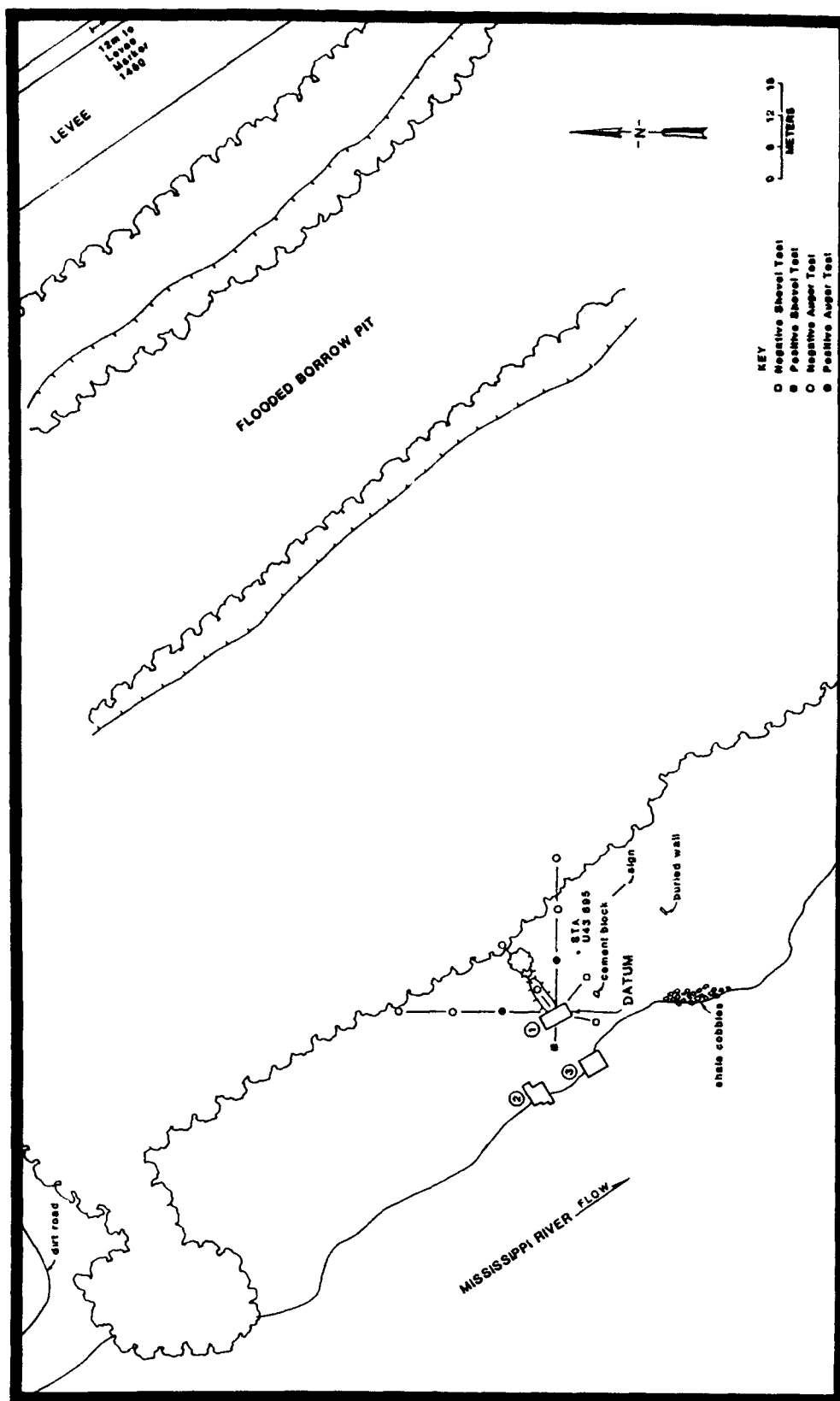


Figure 50. Site plan of 16IV142.

Shovel testing then was conducted around the features. Of the four shovel tests excavated at the site, one produced brick fragments, while the others were devoid of cultural materials. The positive shovel test was located in an area central to all three features (Figure 50). Sediments in all four tests consisted of 2.5Y 4/4 olive brown silt loam; these sediments appeared to be reworked. The brick fragments were not associated with any distinct cultural deposits. As a result of testing, NPS SG-1 (16IV142), was determined to consist of three concrete foundations with no associated buried features or artifact concentrations.

CHAPTER VII

LABORATORY ANALYSES

A total of 546 artifacts were recovered during the 1988 archeological survey and testing within the St. Gabriel project area. In addition to the collections from the 1988 project, this chapter discusses 1095 artifacts recovered by the Corps of Engineers from the St. Gabriel Emergency Revetment project in 1984.

All artifacts were washed, sorted by material classification, and then placed into bags labeled by provenience. During cataloging, these materials were encoded into a computerized site catalog to allow manipulation of part or all of the data sets. This catalog was organized hierarchically. The first and primary classification level was the Category, based on the format currently employed by the Louisiana Division of Archeology. The second level was the Group or functional classification, based on behavioral activity patterns (South 1977:93). The third level, Type, classifies materials by their comparable diagnostic attributes. The fourth and final level was the Subtype, which when combined with Category, Group, and Type, provided a unique code at a detailed level of pattern analysis.

Ceramic sherds, nails, and glass fragments are described according to standard archeological classificatory terminology, as defined in the first portion of this chapter. Identification and classification of other classes of artifacts are limited to descriptive overviews of the nature of recovered materials. The identification and classification of ceramic artifacts are emphasized here because of the utility of ceramics in chronological, economic, and behavioral reconstructions. While glass artifacts also serve as chronological indicators and have other applications in site interpretation, glass artifacts recovered from the project area provided substantially less diagnostic information than the ceramic artifacts. Nails also provided time-sensitive information.

Typology and Chronology

Artifacts were analyzed on two levels. Recovered artifacts were described, as possible, by standard archeological terminology as a prelude to chronological reconstruction. Artifacts then were assigned dates through comparison of the identified artifacts with others having documented use-popularity patterns. Ceramics, glass, and nails all provided chronological information. On a second level of analysis, both functional and socioeconomic attributes of the collections were studied. The results of these experiments will be discussed later. The following begins with review of the chronological ramifications of the artifact assemblages.

Ceramics

A fairly coherent and well-developed classification has been developed for eighteenth century ceramics, based on technological and stylistic variables. Similar classification for nineteenth century ceramics is not as well defined. Gradual changes in paste and glaze, and the simultaneous use of decorative designs on differing ware types, have complicated attempts to delineate a concise ceramic chronology for this period. Therefore, separate chronologies for wares and decorative technologies were established for this study. During analysis, a combined date range was established that considered all of these variables.

The ceramic subassemblages consisted largely of refined earthenwares. In the late eighteenth and nineteenth centuries, changes in technology and stylistic differences for these wares occurred at such a pace that both could be used to provide a tight ceramic chronology. Starting in the eighteenth century, European potters began to compete for the ceramic market, which at that time was dominated by Chinese porcelains. The subsequent development of increasingly refined earthenwares reflects their attempts to gain control of this market. Through time, changes in technology and style for earthenwares have demonstrated direct correlation with the technological and stylistic changes in porcelain. Therefore, in any chronological discussion of refined earthenwares, reference to changes in porcelain technology and use popularity patterns is essential.

Some of the earliest forms of refined earthenware developed for the European market were tin glazed earthenwares. These wares were considered in three categories. Falence is the general term for tin glazed ware manufactured in France. Similar wares from Holland and England are known as delft. Equivalents in Italy, Iberia, and Mexico are called maiolica. Tin glazed earthenware has a soft porous paste, ranging in color from yellow to buff to red. The glaze or enamel is a thick, opaque covering, produced by adding tin oxide to a lead glaze. Vessel forms for this ware generally were plates, mugs, jugs, candlesticks, chamber pots and wash basins (Noël Hume 1970:109-110). However, in the mid-nineteenth century, delftware was manufactured in smaller thinner forms in an attempt to attract some of the porcelain market. These forms met with little success, because they tended to chip and lose their glaze.

Creamware is a refined earthenware characterized by a cream colored paste and clear to slightly green tinted glaze. Creamwares vary in color from deep buff to light cream color, with the lighter color more recent. A fashionable tableware, creamware frequently was left undecorated; when it was decorated, the primary technique was molded decoration. Applied techniques, such as handpainting, transfer print, and sponge/spatter, were not as popular, but were not uncommon.

Creamware was perfected by Josiah Wedgwood ca. 1762; by the 1790s, its popularity had secured England's domination of the world ceramic market. Whereas 'delftware' and white salt-glazed stoneware had failed in their attempts to fulfill the Englishman's desire for Chinese porcelains, the creamware alternative succeeded. Creamware's success can be attributed in part to the timely one hundred per cent tariff imposed on the importation of porcelain, which made the price substantially higher than that of creamware. Its popularity increased partly because of astute marketing techniques (Miller 1980) and partly because of increased availability, which also was related to the high tariff. Although this ware was successful in competing with porcelain, its popularity began to wane in the late 1700s. In 1779, Wedgwood introduced a new whiter ware (Godden 1965:xxi). While this ware could not compete in the market with porcelain, he hoped that it would substitute for the preferred ware. This ware, termed pearlware by archeologists and historians, is characterized by its cream-white paste covered with a thin soft blue to blue/green glaze. The bluing was added to imitate the bluish cast given off by Chinese porcelains. Vessel walls tend to be thinly potted; however, the edges and foot rings are sharply defined (Sussman 1977:106).

In the late eighteenth century, Spode developed a 'bone china' that had a whiter paste than the Chinese version. Gradually, this porcelain type replaced Chinese porcelain in the English market. To continue the competition for the porcelain market, potters gradually began to add less bluing to their pearlware glazes until the glaze became almost clear. This clear glazed version generally is referred to as whiteware, although no ware distinction was made by the potters between wares with bluing and those without. Throughout this period, decorations on both wares remained the same. The process of change was a gradual progression.

Introduction of the ware commonly referred to as ironstone added a new dimension to the refined earthenware progression. This ware was manufactured by the addition of pulverized slag or the scoria of ironstones to the paste (Moore 1944:169). First produced around 1813, ironstone did not gain widespread acceptance until the 1840s. Due to its durability, ironstone became very popular in the Americas, and one

variety containing bluing—some say in the paste while others say in the glaze—was instrumental in the revival of a preference for blue glazed 'pearlware.' This 'revival pearlware' had a harder, more brilliant glaze than the earlier version; tinting ranged from deep blue to almost colorless (Sussman 1977). There are many similarities in paste and glaze between whiteware and ironstone. For the purpose of this study, when no distinction could be made, sherds were classified as whiteware/ironstone.

Over the course of this century of earthenware development, independent changes occurred in ceramic decorative technology and style. These technological and stylistic variations occurred simultaneously on earthenwares with overlapping production dates. Because of the previously mentioned difficulties in ware distinction, especially between whiteware and ironstone, documentation of these stylistic attributes is an essential temporal and analytical tool. Stylistic documentation, such as George Miller's chronology on shell edged decorations (personal communication 1985) and Wetherbee's (1985) stylistic documentation of ironstone patterns, provides date ranges based on decoration. The following decorative types were present on creamware, pearlware, whiteware, and ironstone sherds:

Edged ware

Edged ware, more commonly called "shell edged," was primarily manufactured in blue and green. In use as early as 1775, it was one of the first patterns applied to pearlware. Early examples were intricately molded, presumably to represent naturalistic shell rims. Through time, incised and molded decorations became increasingly simplistic, until the rims became unscaloped. Incisions developed to simply straight lines. Under glaze hand painting applied to enhance molded designs followed a similar progression. In early examples, color application followed the relief of the molding; in later examples, the color was no more than a straight band following the circumference of the rim.

Transfer Printing

Transfer printing was produced by English potters as early as 1750, but it only was applied as over glaze decoration until post-1760. This process started with a design engraved on copper plating. Once the plate was covered with the paint, tissue paper was placed over it, transferring the design to the tissue paper, which in turn was transferred to the ceramic object. When the color was dry, the paper was washed off, leaving only the painted design. Transfer printing enabled the potter to produce identical intricate detailed designs on innumerable matching pieces at a cost far below that of similar hand-painted pieces (Miller 1980:4).

Mocha

Dendritic and/or finger-trailed "common cable" decorative designs applied on a dipped background with banded borders occurred from the 18th through the 19th century.

Flow Blue

Flow Blue is a variation of transfer printing introduced in the early 1820s by Josiah Wedgwood II. Thought by some to have been a mistake of the potters, this decorative design was produced intentionally by placing cobalt transfer printed wares in saggers during the glaze firing, resulting in the flowing of the color outside the lines of the pattern. There are two distinct categories of Flow Blue. 'Old' Flow Blue was used primarily on stoneware, patterns were excessively blurred, often

beyond the point of pattern recognition. 'New' Flow Blue was used on ironstones from the late 1800s to early 1900s. Designs were sharper in definition, and often were embellished with overglaze gild. Popularity of cobalt as a primary decorative color was fostered by the 1775 discovery of a cobalt source near Truro, England (Blake 1971:iii). By 1818, most of the 140 Staffordshire potters used cobalt blue as their major decorating color. Prior to that time, the high cost and limited availability of imported cobalt limited its use (Blake 1971:iv).

Yellowware is a hard paste earthenware, which can be distinguished by its yellow paste and clear glaze. The process for manufacturing yellowware was introduced to the United States as early as the 1830s by immigrant European potters, and rapidly became popular with American potters. Generally, yellowwares from American sites are regarded as having been domestically manufactured. Usually unmarked, yellowware vessel forms include items such as large bowls, chamber pots, spittoons, and ginger beer bottles (Genheimer 1987). The yellowware ginger beer bottle was developed by American potters to compete with the English stoneware version, popular in the late nineteenth and early twentieth centuries. While the form and decoration of the yellowware bottles were indistinguishable from those of stoneware bottles, the porosity of yellowware paste necessitated glazed interior surfaces. Decorations can be divided into three basic categories: simple banding or rings in white, yellow, brown, or blue; rockingham type glaze, the most popular of the yellowware decorative designs, characterized by the dark brown to yellow sponged-glaze effect known as tortoise shell; and a third, less popular, variation that consisted of designs similar to those evidenced on English mocha. In popular use from the mid-1850s until the turn of the century, yellowwares still are produced in limited numbers today. However, modern yellowware generally is whiter in paste with a yellowed glaze. Although they are treated separately by some authorities, brownware and yellowware differ essentially only in degree of clay refinement and baking temperature, the lighter ware being more highly fired (Ketchum 1971:93).

Porcelain is a highly vitrified ceramic with an alkaline glaze. It first was manufactured in Asia and later in England, continental Europe, and the United States. Within this ware there are two type distinctions. Asian and Continental porcelains are considered 'hard paste,' which is made of the natural clay, and appears sparkling, fine grained and vitreous when broken. English and American porcelains are 'soft paste,' which is more porous and dull, and is made of artificial clays. However, it should be noted that all modern porcelain is hard paste. Porcelain clay was used to produce items including fine dinnerware, accessory serving pieces, and ornamental pieces such as figurines.

One still later porcelain type, a borderline type between stoneware and porcelain, is referred to as "porcelaneous stoneware" or "semi-china." The main differences in the manufacture of stonewares and porcelain are matters of a few minor ingredients, preparations, and degree of firing. This later porcelain, a more durable type, was produced by the introduction of ball clay into the paste, and was used most commonly for hotel, restaurant, and institutional dinnerware (Worthy 1982:337).

Stoneware is a compact, finely grained ceramic. The body is an opaque non-porous paste, produced by high firing temperatures (1200° C). Glazes, while commonly used, are considered aesthetic rather than functional. American potters always had the technology to produce their own stonewares, but early coastal settlements did not have ready access to clay sources. It was not until the late 18th century, when improved transportation systems made the use of inland clays economically viable, that serious attempts were undertaken to commercially produce stoneware. Domestic salt glazed stoneware was in limited production during the early 18th century (at same time salt glaze was declining as a primary pottery type in Europe). It flourished in the early to mid-nineteenth century, but its popularity waned in the latter half of century.

From 1775 to the 1850s, stoneware vessel shapes and decorative designs were influenced by the highly stylized European forms. During the mid-nineteenth century, several factors were instrumental in the change of stoneware shape and decorative technology. Advancements in glass and refrigeration technology

and increased demand necessitated the sacrifice of detail for utilitarian shapes and simplistic decorative techniques. By 1890, most stoneware was undecorated and mechanically mass produced. This enabled small companies to stay in the increasingly competitive container market. Stoneware ale bottles were in production in the latter half of the nineteenth century, and generally have a buff body and yellow glaze (Goodwin, Gendel et al. 1983).

Table 3 illustrates the ceramic types present at sites in the project area. Twelve ceramic types with 16 distinct decorative designs have been identified (Table 4). All information is listed in Table 5.

Glass

For nineteenth and twentieth century artifact assemblages, analysis of bottle glass becomes increasingly important in temporal and functional assessment. Diagnostic changes in bottle manufacturing technology, and the increased use of bottle embossments during this time, elevate the importance of bottle glass as a major tool in dating sites. Therefore, for this study, a detailed bottle glass chronology is included. There are four basic categories of diagnostic attributes to consider in the analysis of bottle glass: mold type, empontrilling method, finishing techniques, and color. Technology for mold produced bottles has existed for centuries. However, not until the 17th and 18th centuries, when hinged metal molds were developed, did mold-blown bottles begin to replace free-blown bottles (Munsey 1970:38). Use of these molds did not become ubiquitous until the early 1800s. At that time, the pace of technological advancement increased dramatically in many areas of the glass manufacturing industry.

Development of shoulder and full height molds, new empontrilling methods, and improved finishing techniques were primary areas of advancement. On shoulder height molds, seam lines are obliterated just above the curve of the shoulder. The disappearance of these lines results from the bottle's finishing process. The two main types are the shoulder height multi-piece (1820-1920), and the one-piece dip mold. On full height molds, vertical seams appear from the base to just below the lip. Above this point, seams were obliterated during the finishing process. Principal varieties of this mold type include the bottom hinge, 1810-1880 (Munsey 1970:39), with a basal seam running either diagonally or straight across the bottom; the multi-part leaf mold, 1850-1920, with 2, 3, or 4 vertical leaf parts and separate base part; and the 3-part dip mold, 1850-1920, an improved version of the dip mold that allowed variations in bottle shape not possible with the dip mold. Separate basal parts such as cup and post bottom are used as descriptive terms; unfortunately, these mold attributes provide no chronological information, since they appear on both machine-made and hand-molded containers.

Two additional molding variations used at that time were turn-paste and plate molds. Turn-paste molds (1870-1920) produced a symmetrical bottle by turning a bottle inside a paste-coated mold. While this method obliterated seam lines, it also prevented the embossment of bottles. Plate molding, 1821-1920 (Jones and Sullivan 1985:49), was an adaptation of the previously mentioned molds and contained removable or interchangeable plates. Thus, the same main or base mold could be used to manufacture bottles with different embossments.

There were four common methods of holding bottles during the finishing stage of hand blown glass. All methods held the bottles by the base, allowing the craftsman free access to finish the bottle lip. Two of these methods were glass-tipped, using either a solid iron bar or a blow pipe. Solid iron bar pontils are characterized by a solid jagged circular scar left when the rod is broken off from the bottle base. Blow pipe scars are similar, except that the scars are jagged rings, not solid like rod scars. While both methods still were employed on pharmaceutical bottles until the turn of the century, their use on other bottle types was replaced by bare iron empontrilling in the mid-1800s.

Table 3. Historic Ceramic Types Present at St. Gabriel with Mean Dates, Date Ranges, and Reference Sources.

MATERIAL TYPE	MEAN DATE RANGE	DATE	DATE SOURCE
CERAMIC WARE AND DECORATION			
Brownware			
Plain	1840 - 1900	1870	Ramsay 1947
Buff-Bodied Earthenware			
Albany slip	1820 - 1900	1860	Goodwin, Gendel et al. 1983
Creamware			
Annular	1790 - 1820	1803	South 1977
Plain	1762 - 1820	1791	South 1977
Domestic Brown Stoneware			
Albany slip on buff	1810 - 1900	1855	Goodwin 1983
Imported Gray Stoneware			
Underglaze, handpainted			
Unidentified			
Domestic Gray Stoneware			
Salt glazed, undecorated			
Industrial			
Buff-bodied	1850 - 1900	1875	Ketchum 1983
Early Refined Earthenware			
Mocha	1795 - 1890	1843	South 1977
Ironstone			
Molded	1840 - 1900	1870	Praetzellis 1980
Annular			
Undecorated white	1813 - 1900	1857	Wetherbee 1985
Later Porcelain Type			
Plain, soft paste			
Plain, hard paste			
Overglaze handpainted, hard			

Table 3, continued

MATERIAL TYPE	MEAN DATE RANGE	DATE	DATE SOURCE
Pearlware			
Annular	1790 - 1820	1805	South 1977
Mocha	1795 - 1890	1843	South 1977
Transfer printed	1795 - 1840	1818	South 1977
Scalloped rim, imp. bud	1800 - 1850	1825	Miller 1980
Scalloped rim, imp. lines	1795 - 1840	1818	Miller 1980
Plain	1780 - 1830	1805	South 1977
Underglaze, handpainted	1780 - 1820	1800	South 1977
Underglaze, polychrome	1795 - 1815	1805	South 1977
Redware			
Clear glazed, slipped			
Tin Enamelled Earthenware			
Debased Rouen faience			
Faience			
Unidentified			
Apothecary monochrome			
Whiteware			
Flow blue, transfer printed	1820 - 1860	1840	Miller 1980/South 1977
Unscaloped, imp. rim	1820 - 1896	1858	Miller 1980/South 1977
Scalloped, curved lines	1820 - 1845	1833	Miller 1980/South 1977
Scalloped, straight lines	1820 - 1845	1833	Miller 1980/South 1977
Unidentified edgeware	1820 - 1897	1859	Miller 1980/South 1977
Plain	1820 - 1900 +	1860	South 1977
Whiteware/ironstone	1813 - 1900 +	1857	Goodwin 1983
Dipped/annular	1830 - 1900	1865	Ramsay 1947/South 1977
Sponge/spatter	1820 - 1920	1870	
Handpainted, polychrome			

Table 3, continued

MATERIAL TYPE	MEAN DATE RANGE	DATE	DATE SOURCE
Yellowware			
Plain	1830 - 1900	1865	Ramsay 1947
Rockingham/bennington glaze	1830 - 1900	1865	Ramsay 1947

Table 4. Ceramic Sherd Counts by Ware and Types.

WARE DESCRIPTION	16M152	16M153	16M154	16M155	NEW ORLEANS DISTRICT SITE							GENERAL SURFACE
					UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TRENCH 1	TRENCH 2	
Brownware												
Plain	1											
Buff Bodied Earthenware												
Albany slip		1										
Creamware												
Annular		6						2			1	
Plain		11	4						1		2	
Stoneware												
Domestic brown - Albany slip on buff	1											
Domestic gray - salt glazed								2				
Imported gray - underglaze handpainted			1									
Unidentified			1									
Industrial - ginger beer bottle								6				8
Early Refined Earthenware												
Mocha			3		2			2	6			2
Limestone												
Plain, white	33	1	1					5	2			1
Molded	1											

Table 4, continued

WARE DESCRIPTION	16IV152	16IV153	16IV154	16IV155	NEW ORLEANS DISTRICT SITE							GENERAL SURFACE	
					UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TRENCH 1	TRENCH 2		
Annular	1		1										
Institutional				1									
Porcelain													
Overglazed, hard										1			
Underglazed, hard									1				2
Plain, soft paste	2			1									
Pearlware													
Plain		1	6				1	4	8			2	3
Annular	1								2				
Mocha			1										
Transfer printed		2	1										
Scalloped rim, Imp. bud	1	1											
Scalloped rim, Imp. straight lines	3												
Floral polychrome									1			1	
Underglaze, handpainted		7	2										
Redware													
Clear, slipped		1											

Table 4, continued

WARE DESCRIPTION	16IV152	16IV153	16IV154	16IV155	NEW ORLEANS DISTRICT SITE							GENERAL SURFACE
					UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TRENCH 1	TRENCH 2	
Tin Enameled Earthenware												
Apothecary monochrome												1
Debase Rouen faience		1										
Faience		1										
Unidentified		1										
Whiteware												
Plain	15	1	1			2	2	10	14	2		20
Annular								2				
Flow blue									4			
Dipped/annular												1
Polychrome												2
Sponge/spatter									1			1
Transfer printed	1		1						4			1
Scalloped rim, imp. curved lines												2
Scalloped rim, imp. straight lines				4					1			
Unscaloped, imp. lines	4											
Unidentified edgeware									2			

Table 4, continued

WARE DESCRIPTION	16N152	16N153	16N154	16N155	NEW ORLEANS DISTRICT SITE							GENERAL SURFACE
					UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TRENCH 1	TRENCH 2	
Whiteware/ Ironstone	19		2	1	1		1	2				
Yellowware												
Dipped/annular			3									
Rockingham/ bennington									1			
Unidentified												
Burnt white bodied								1	2			
TOTAL	78	42	29	7	3	2	4	36	60	3	6	44

Table 5. Chronological Information from Ceramics and Glass from the St. Gabriel Project Area.

	MEAN CERAMIC DATE	NUMBER	CERAMIC DATE RANGE	MEAN GLASS DATE	NUMBER	GLASS DATE RANGE	HYPOTHETICAL DATE RANGE
SITE/PROVENIENCE							
16N152	1858	75	1840 - 1900	1860	26	1850 - 1910	1851 - 1900
16N153	1811	34	1800 - 1840	1860	1	1845 - 1875	1820 - 1860
16N154	1834	27	1830 - 1860	1954	15	post 1920	1830 - 1870
16N155	1838		1820 - 1845	1903		1890 - 1925	1820 - 1860
NEW ORLEANS DISTRICT SITE							
Unit 1	1851	3	1813 - 1900				
Unit 2	1860	2	1820 - 1900	1895	6	1860 - 1910	
Unit 3	1846	2	1820 - 1900				
Unit 4	1850	17	1820 - 1900	1885	4	1850 - 1920	
Unit 5	1841	15	1820 - 1860	1895	2	1850 - 1920	
Trench 1	1860	2	1820 - 1900	1954	20	post 1920	
Trench 2	1811	3	1790 - 1840				
General Surface	1856	38	1830 - 1890	1891	7	1860 - 1910	
SITE TOTAL	1848	82	1830 - 1860	1923	39	1850 - 1920	1859 - 1990

Bare iron emponitilling was a quicker process, and involved a flared iron rod which was heated red hot and applied directly to the bottle base surface. When it was removed, a smooth, indented, circular scar remained. This method was popular until the early 1870s, when it was replaced by the snap-case method as the primary emponitilling method. A snap-case emponitilling device is defined as "a four-pronged clip attached to an iron rod, a closely fitting case of wrought iron mounted on a long handle from which only the neck of the bottle is allowed to project" (Jones and Sullivan 1985:46). Since this method provided no evidence of its use, it is not helpful in dating.

The last step in bottle production is called the finish. This step involves the formation of bottle lips. Prior to the mid-1800s bottle lips were finished by various methods including cracked-off, burst-off, everted or flared, flanged, fold-in and fold-out, as well as a number of applied lip techniques. Which methods were used depended on the intended bottle use, closure method, and artisan preference. Applied lip is a general term which refers to the application of an additional glass strip to the reheated bottle neck, the exact shape and width depending on the intended closure. Flanged lips are formed by manipulation the glass at the end of the neck. This glass is flattened, projecting outward horizontally from the bottle neck (Jones and Sullivan 1985).

Two primary methods employed during the mid- to late nineteenth century were the lipping tool and flared or fired lip. A lipping tool is a hand-held clamp and plug device. The plug was placed in the bore of the reheated bottle neck and the two-pronged clamps around its outer edge. The tool was rotated manually, thus shaping the lip. Evidence of this method is the obliteration of mold seams on the neck, horizontal striations in the glass, and an excess of puddled glass on the neck at the bottom of the tooled finish.

The fired or flared lip was a method by which an already formed bottle lip was finished. The neck of a full height mold bottle was reheated in the 'glory hole' of the furnace, thus melting and smoothing the rough edges left by the mold. In addition, this process faded or obliterated sear marks, depending upon the amount of reheating and the distinctiveness of the marks.

The color of nineteenth century bottle glass, while not always a temporal factor, can be used as an indicator of function. Dark green, green, and olive green were common colors for spirit bottles. Theoretically, this color prevented harmful rays of light from damaging the product. Various shades of aqua ranging from green-blue to blue-green were used for bottled mineral and soda water products. The use of clear glass was widespread, and therefore provides no additional interpretive information.

During the late nineteenth century, glass container manufacturing became progressively more mechanized, beginning with the development of semi-automatic machinery (circa 1880), and culminating with the introduction of a fully automated version (1903). The first successful implementation of a fully mechanized process was developed by Michael Owens; by the 1920s, his machines had become the number one bottle manufacturing method in North America.

Differences between semi-automatic and fully automatic machines primarily consisted of the method of transference of molten globs from furnace to mold. Semi-automatic machines received the glob manually, while fully automatic machines were fed directly from the furnace, eliminating any manual involvement. Cost and increasing demands, not quality, were the reasons for this change. Machine manufactured bottles, while retaining some quality standards, could be produced at a quicker rate and with less labor. With lower production cost passed on the consumer, machine made bottles quickly became the preferred product.

All diagnostic glass artifacts are listed by manufacturing technology and frequency in Table 6. Information used in chronological reconstruction is listed in Table 5.

Table 6. Glass Artifact Counts by Manufacturing Technology.

WARE DESCRIPTION	16IV152	16IV153	16IV154	16IV155	NEW ORLEANS DISTRICT SITE							GENERAL SURFACE
					UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TRENCH 1	TRENCH 2	
Mold Types												
Blow back		1										
Machine made	3		15								20	
Semi-automatic										1		
Post bottom	4								2			3
Turn paste	4						6					4
Two-piece mold	2											
Non-machine made	7								1	2		
Pontil												
Iron rod		1										
Lip Finish												
Fire polished	13											
Lipping tool	4								4	2		3
Applied lip	3								1			3
Table Glassware	3	1							1			
Unidentified Bottle	137	3	15	5		21	22	9	73	11		61
TOTAL	180	6	30	5		21	28	9	82	16	20	74

Nails

The identification of various nail types is useful in both temporal and functional analyses. There are three basic stages in the technological chronology of nails: wrought nails, cut nails, and wire-drawn nails. While wrought nails still are manufactured today, they are used primarily for restoration and reproduction purposes. Hand forged wrought nails were the primary construction fastener in the seventeenth and early eighteenth centuries. Their use effectively ended with the introduction of machine-cut nails (Nelson 1968).

Cut nails were introduced in the 1790s. These nails had a machine cut body with a hand made head. Not until technological advancements around 1815 had produced a totally machine made version did they begin to replace wrought nails as primary construction fasteners (Nelson 1968).

Wire-drawn nails first were introduced into the United States from Europe ca. 1850. These earlier wire nails were used primarily for box construction; they were not adapted for building construction until the 1870s. Although cut nails are preferred by some builders today, they were replaced almost universally by the wire nail by the turn of the century (Nelson 1968).

Although nails were recovered from most tests within the project area, the only identifiable nails were recovered from 16IV154 and from the New Orleans District's emergency excavations of 1984. Wire nails were recovered from the surface collections at both sites. Machine cut nails were recovered from Auger Test 1, Trenches 1 and 9, and Unit 1, Level 2, at 16IV154. They also were present in all levels of every unit at the site (16IV146) investigated in 1984 by the NOD. In addition, one handwrought nail was recovered from Test Unit 2, Level 4 of Site 16IV146.

Miscellaneous Artifacts

A few artifacts are listed here under the heading "miscellaneous." Many of these artifacts are small items that were lost rather than intentionally discarded. Included in this number are metal and porcelain buttons, gun cartridges, hair combs, tobacco pipes, and gun flints. The gun flints are of both the English and French varieties. The French "honey colored" flint was considered superior to the English black or gray flints even by the English until the turn of the nineteenth century. By the early nineteenth century, American traders were selling English flints exclusively (Noël Hume 1970:220-221). In 1972, Hudson and Hudson reported on the results of analysis of gun flints found at the Gallier House, New Orleans, which was constructed in 1857. Their findings for the pre-1857 site component show that all but one of the 124 gun flints were of French flint and manufacturing style (Hudson and Hudson 1972:2).

Several stem fragments from ball clay (kaolin), and molded reed stem pipes were recovered from the NOD's emergency excavations and from 16IV153. While ball clay pipe stems have been included in archeological research based on datable bore size analyses, examples found during testing of these sites date from outside established parameters with statistical reliability. Reed stem pipe attributes are defined on the basis of bowl shape and size, and decorative motif. The reed stem pipe recovered from the NOD project (16IV146) was red clay, plain molded, and unglazed. None of these attributes facilitate temporal assessment.

In addition, the recovered comb fragments from the 1984 NOD project (16IV146) were made of bakelite. This substance, developed in 1909, was a predecessor to plastics and also was used in the manufacture of buttons, tooth brushes, and small machinery parts such as washers and cogs. One metal button (16IV152) and two small porcelain buttons from the 1984 NOD project (16IV146) were included in the artifact assemblages. The metal button was a medium size (3/4"), common to men's clothing; the small white utilitarian porcelain buttons were used regularly on clothing such as shirts from the mid-nineteenth century into the twentieth century.

Results of Analyses

Temporal Analyses

As noted above, the ceramic and glass subassemblages were used in chronological assessments. Analyses of ceramic sherds involved the inspection of the relative incidence of datable ceramic wares, calculated mean ceramic dates, and the employment of manufacturers' mark date ranges. Mean ceramic dates were calculated using the formula developed by Stanley South (1977). This formula is based on the twin assumptions of normalcy and unimodality, so that a ceramic type's peak popularity is represented by the median date between its introduction and its discontinuance. Date ranges for ceramic types and decorative techniques used in this computation were derived from manufacturing dates and popularity use patterns. Manufacturers' marks were used when present, since they provide the most accurate ceramic dates. These marks provide direct source dating derived from the operational dates of the pottery and/or the use of a specific mark by that pottery.

Five sites within the St. Gabriel project area, 16IV152, 16IV153, 16IV154, 16IV155, and the 1984 NOD project area (16IV146), produced ceramic subassemblages. These subassemblages were examined for relative frequencies of refined earthenwares to establish general temporal boundaries. As noted above, creamware was the most popular ware during the late eighteenth century. However, the introduction of pearlware into the market was readily accepted; during the first quarter of the nineteenth century, pearlware steadily increased in popularity until, by the mid-1820s, it was by far the more popular of the two wares. About this time, whiteware began to make a strong showing in the marketplace. However, manufacturers' records make no mention of a distinction between pearlwares and whitewares, but rather list inventories according to decorative design. Ironstone, which was introduced in 1813, also began to gain popularity at that time. Together, these wares increased in popularity so that, by the early 1840s, they were far more popular than pearlware. As illustrated in Figure 51, the relative frequencies of creamware, pearlware and late refined earthenware (whiteware, ironstone, and whiteware/ironstone) differed for each site. The 16IV152 and 16IV155 subassemblages were composed entirely of late refined earthenwares, indicating a post 1850s date. At 16IV153, creamware and pearlware percentages were almost the same, with a slight showing of late refined earthenwares; this indicates a very early nineteenth century date for the subassemblage. The relative frequencies for 16IV154 indicates an early to mid-nineteenth century occupation. While the NOD project area produced results indicative of an earlier post date than 16IV152, the limits of the occupational span are nearly as vague.

Based on the frequencies of these ceramic types, chronological placement of the four major sites is illustrated in Figure 51. As this seriogram illustrates, 16IV153 is the earliest of these sites. This interpretation is based on the relatively high percentages of both creamware and pearlware, bracketed chronologically by small percentages of faience and late refined earthenwares. Site 16IV154 and the NOD's project area (16IV146) place later in the chronology, based on their decreased frequencies of creamware and pearlware, and on the increased percentages of late refined earthenwares. Late refined earthenwares exclusively at 16IV154 confirm its chronological placement as the latest site in this study area.

The mean ceramic dates for each site also were calculated. The date ranges, mean dates, and sources of chronological information are shown in Table 3. As Table 5 shows, the results of these calculations match the relative frequency patterns illustrated in Figure 51.

There were two manufacturers' marks on ceramic sherds from 16IV152: J. & G. Meakin, Hanley, England (post 1851), and Baker & Co., Ltd, England (1839-1932). Two marks were evidenced on ceramic sherds from the NOD's project: a ginger beer bottle marked "Port Dundas Pottery, Glasgow" (1850-1932), and a registry mark on an ironstone sherd dating from 1859. For both sites, the production dates are within the ceramic date ranges (Table 3) which confirms their accuracy. Furthermore, the use of these

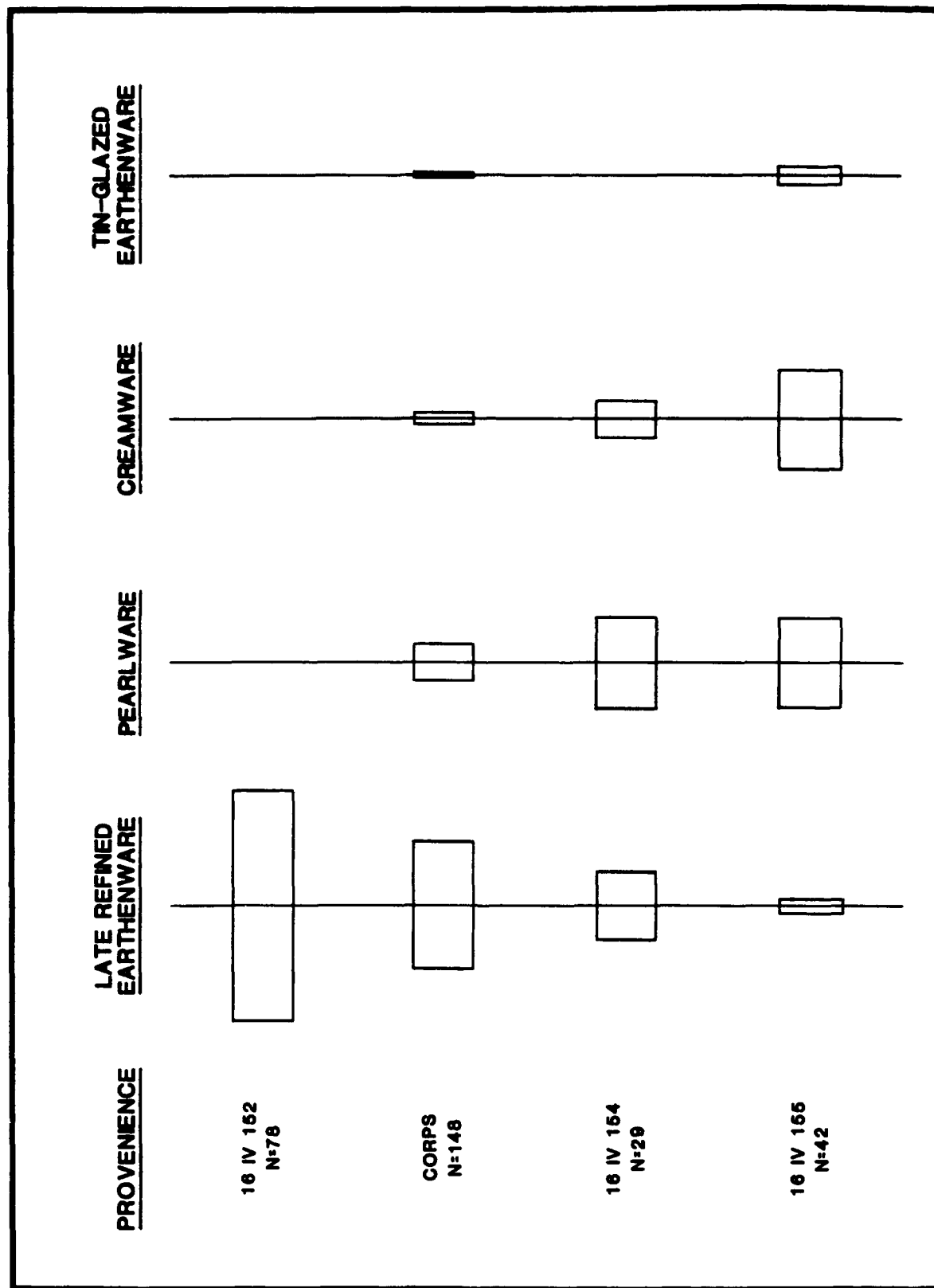


Figure 51. Seriated sequences of sites by ceramic frequencies.

manufacturers' marks establishes solid terminus post quem for these sites; post 1851 for 16IV152 and post 1859 for the NOD site (16IV146).

Temporal analysis of glass subassemblages involved examination of bottle sherds for diagnostic manufacturing techniques and for datable bottle embossments. Technological information is based on documented advancements, and provides chronological information. As Table 5 illustrates, information derived from temporal analysis of glass differs from the ceramic data. The relatively recent addition of bottles to the surface assemblages, illustrated in the number of machine made bottles evidenced among the surface collections for the various sites, accounts for some of this discrepancy. However, during the nineteenth century, bottle glass entered the archeological context more rapidly than ceramic vessels, thus making bottle glass a more accurate temporal indicator (Harris, Wojtala et al. 1988; Goodwin, Yakubik, et al. 1984).

Comparative Socioeconomic Scaling

The ceramic subassemblages from four sites, 16IV152, 16IV153, 16IV154, and the NOD site (16IV146) contained sufficient sherds to allow examination of the socioeconomic classification, as outlined by George Miller (1980:3). Percentages of the four ceramic groups, based on decoration, were calculated for each site (Table 7). From least expensive to most expensive decoration, Miller's classification encompasses:

1. Plain or undecorated wares;
2. Minimal decoration (low skill level);
3. Simple hand painted wares (semi-skilled painting);
4. Transfer printed (and Porcelain) wares.

Since Miller's classification was designed for the classification of whole ceramic vessels, application of this analytical process based on sherd counts will show high percentages of plain wares. Therefore, for this comparison emphasis was placed on the three decorative classifications. In addition, porcelain types were included in the transfer printed level of classification, since this ware was considered the most expensive of all.

Within the St. Gabriel project area, comparisons of ceramic price levels were made among the four identified sites with ceramic subassemblages. The results of this analysis are shown in Table 7. With the exception of 16IV152, sites included in this comparison provided evidence of moderate priced ceramic types, and, by extension, moderate status. Site 16IV152, the most recent site in the comparison, had the lowest ranking, with low to moderate priced ceramic types; 16IV153 had the highest, due to its high percentage of handpainted ceramic types. As illustrated in the archival record, 16IV153 was a small subsistence plantation until the late 1850s; census records for the subsequent sugar production indicate that the area was not in active cultivation after the mid nineteenth century. The comparison of scaling results between 16IV153 and the contemporaneous Celeste (16IV149, Goodwin, Armstrong et al. 1988) and Elmwood (16JE138, Goodwin, Yakubik, and Goodwin 1983) plantations, further serves to illustrate the status of this assemblage. The status of the 16IV153 ceramic subassemblage came nowhere near the ranking of the owner occupied residence at Elmwood plantation, nor did it meet the ranking of the lower overseer's occupation remains illustrated by the Celeste plantation ceramics. The status of 16IV154 was slightly lower than that of 16IV153.

Table 7. Comparative Percentages of Ceramic Decorative Designs for Sites Located within the St. Gabriel Project Area (Ceramic Price Scaling, after Miller 1980).

CLASSIFICATION	16IV152	16IV153	16IV154	16IV146 (NOD SITE)	16IV149	16JE138
Plain	89.6	40.0	51.8	68.1	31.2	36.0
Minimal Decoration	6.5	34.3	33.3	21.0	37.5	9.4
Simple Hand Painted	—	20.0	7.4	9.7	3.0	1.8
Transfer Painting	3.8	5.7	7.4	9.7	28.1	52.7

Functional Analysis

Artifacts recovered from the project area also were examined on the basis of function, in an attempt to establish use patterns and the nature of the site. The organization of the data was based upon behavioral activity groups identified for inhabitants of historical occupations. Discussion of these groups is as follows:

Kitchen group materials were defined as those material remains that are directly associated with food preparation and service. Elements of this group included ceramic food service and storage vessels; glass food containers, serving vessels, and drinking vessels; metal implements, cooking vessels, and utensils; and food remains such as bones, cobs, nuts, seeds, pits and shells, e.g. oyster shells.

Architecture group artifacts were identified as those elements directly associated with the building environment. Not included in this group were those elements used to enhance the building environment. Typical included artifacts were brick, mortar, nails, window glass, building hardware, cementing agents, shingles, etc.

Furniture group artifacts were those determined to be associated with the enhancement of the building environment. Besides the obvious furniture elements, this group included flower pots, mirror glass, figurines, and other miscellaneous decorative household items.

The Arms group was designed to encompass all forms and varieties of weaponry. This included gun and pistol parts, and ammunition, as well as knives, swords, bayonets, etc.

The Clothing group designated artifacts directly associated with clothing such as buttons, snaps, etc.; accessory clothing items such as belt buckles, shoe hooks, and shoes; and those items used in the construction and repair of clothing such as needles, pins, scissors, and thimbles.

Personal group artifacts included those elements that are directly associated with an individual or with individual use. Besides coins and keys, this group included tobacco related artifacts, items of cosmetic and personal hygiene use, combs, brushes, and all writing materials.

Activities group could be more aptly called the miscellaneous group of this classification system. It was designed to encompass those elements that had more than one possible function, or those which did not fit into any of the previous functional group classifications. These artifacts include tools, toys, table items, and miscellaneous hardware elements.

Results of functional analyses of remains from sites in the project area are illustrated in Table 8. All sites with a large number of remains had high frequencies of kitchen and architectural group materials. There was minor representation of other functional groups at sites 16IV152, 16IV153, and 16IV154; no other functional groups were identified for 16IV155. However, beyond general inference of domestic occupation, the number and nature of these artifacts precluded any site specific interpretations. All established functional groups were represented at the NOD site (16IV146). Based on the variety of artifacts, including gun flints, buttons, tobacco pipes, and hair combs, this site was determined to represent an early nineteenth century domestic occupation.

Comparative Analysis

A comparative study was undertaken to determine chronological, socioeconomical, and functional similarities and differences between the four major sites within the project area. Temporal boundaries were

Table 8. Functional Representation of Sites Located within the St. Gabriel Project Area.

SITE/PROVENIENCE	N	K	A	F	R	C	P	Z
16IV152	287	91.6	5.2	-	0.7	0.7	-	7
16IV153	57	82.4	12.3	-	1.7	1.7	1.7	-
16IV154	129	55.8	39.5	-	-	-	-	4.6
16IV155	21	66.7	28.6	-	-	-	-	-
16IV146 Unit 1	86	36.0	64.0	-	-	-	-	-
16IV146 Unit 2	69	59.4	37.7	-	1.4	-	1.4	-
16IV146 Unit 3	46	37.0	63.0	-	-	-	-	-
16IV146 Unit 4	207	65.2	32.8	-	-	0.5	1.0	0.5
16IV146 Unit 5	358	40.5	58.9	-	-	0.3	0.3	-
16IV146 Trench 1	25	92.0	-	4.0	-	-	4.0	-
16IV146 Trench 2	15	46.7	46.7	-	6.6	-	-	-
16IV146 Surface	167	77.2	20.3	-	0.6	-	0.6	1.2
SITE TOTAL	973	54.3	44.2	0.1	0.3	0.2	0.6	0.3

KEY: N = Number of Artifacts
F = Furniture
P = Personal
K = Kitchen
R = Arms
Z = Activities
A = Architecture
C = Clothing

established by the combined information derived from relative frequencies of refined earthenwares, ceramic date ranges, and mean ceramic dates. The findings of these analyses concur with the chronological seriations illustrated in Figure 51, which shows 16IV153 as the earliest of the sites, followed consecutively by 16IV154, the NOD site (16IV146), and 16IV152. The hypothetical date ranges illustrated in Table 5 reflect the results of these combined analyses, with the added refinement of post date information derived from dating of manufacturers' marks.

Socioeconomic scaling analysis showed that the ceramic subassemblages from the majority of the sites represent refuse of moderate status. 16IV152, the lowest rank, possibly was part of the Virginia Plantation. Archival records for the plantation during the period from the 1850s -1900 indicate that sugar production dropped off drastically and document numerous changes in ownership. Although scalings for 16IV153 and 16IV154 are similar, as previous discussed they result from differing circumstances. Artifacts from 16IV153 represent refuse of a small subsistence plantation, while artifacts from 16IV154 derive from Saw Mill Plantation during its period of decline.

As previously stated, all sites had high percentages of kitchen and architectural group artifacts, which characteristically signify domestic occupation. Associated artifacts serve to reinforce this assumption with a variety of personal related items. However, the lack of activity associated artifacts prohibits further interpretive assessment.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

Archeological Site Assessment

A total of four historic archeological sites were recorded during the field survey of the St. Gabriel revetment and enlargement item. Two isolated artifacts (SG-5, SG-6) also were documented; additional testing proved these not to be sites. Two sites (16IV152 and 16IV155) consisted entirely of surface scatters without subsurface origins. In addition, in situ remains were not found during test excavation at 16IV153, even though a thin and sparse lens of redeposited brick is eroding from the bankline there. The site has been eroded extensively. Because of the lack of subsurface components at 16IV152 and 16IV155, as well as the river redeposited distributions of the remains at these two locales, these sites clearly lack both integrity and the ability to contribute to the understanding of history [36 CFR 60.4(d)]. Furthermore, they cannot be associated directly with any important events in the region's history. Thus, neither 16IV152 nor 16IV155 possesses the quality of significance as defined by the National Register criteria. No further work is recommended.

Similarly, site 16IV153, a thin and eroded lens of redeposited brick and coal fragments at and near the bankline, lacks both integrity and research potential. The redeposited nature of this linear deposit was evidenced in obvious weathering of artifacts recovered at depth, and in its vertical and horizontal stratigraphic placement (see Chapter VI), on the last relic fringe of the old levee. The only potential feature at the site, the lens in Excavation Unit 2, appears to have been redeposited entirely by high water. Thus, 16IV153 does not meet the criteria for significance as defined by the National Register of Historic Places. No further work is recommended.

Because of the presence of a buried wooden feature at 16IV154, additional intensive archival and field investigations were undertaken there to ensure accurate assessments of both historical associations [36 CFR 60.4(a)] and research potential [36 CFR 60.4 (d)]. Nine backhoe trenches, two hand excavation units, and 20 two meter deep auger tests were used to search for additional features and structural remains, as well as to examine the stratigraphic milieu. Backhoe trenches were excavated throughout the site, wherever auger tests revealed the presence of the buried A horizon that contained the one feature (see Chapter VI). In addition, the board feature was excavated and recorded, and the surrounding area was searched carefully for associated and articulated remains or activity areas. This additional testing proved entirely negative. Other than the feature, artifactual evidence included a coal and brick dust residue that appears to have been water deposited, and of a sparse artifactual assemblage lacking singular research potential. In fact, no significant concentrations of artifacts were found.

Furthermore, the board feature at the site has insufficient diagnostic structural details to permit definitive interpretation of its function. It is not associated with other remains, nor is there direct historical information that either pinpoints the activity the feature was associated with or that elucidates its nature structurally. The working hypothesis, based on scanty historical evidence, e.g., the plantation name, is that the feature at site 16IV154 may have been associated with an antebellum sawmill. From an archival standpoint, research at nine libraries and archives failed to uncover a map indicating the precise locations of the antebellum buildings situated on the nearby sugar plantations (in sections 37 and 38). Likewise, no map was discovered that identifies the location of an antebellum saw mill or any other structure on Saw Mill Plantation, in Section 47. It is unlikely that such maps could be found currently in a different repository. Consequently, it appears doubtful that any additional extensive, detailed data regarding land use patterns in this reach will surface in the future. With the exception of the antebellum lumbering activities on Saw Mill Plantation, the economic development within the reach followed that of the region as a whole, and has been

documented extensively elsewhere. The antebellum lumber industry is a theme of considerable importance, yet there is virtually no direct evidence linking this industry with the specific project area. Similarly, there is no direct and positive link of the feature to the lumber industry; it is a fragment of a walkway, its origin and destination unknown.

The lack of historical documentation combined with the very limited archeological remains indicate that site 16IV154 lacks both the necessary archeological affiliation and historical association to add to the archeological data base, or to contribute to an understanding of history [36 CFR 60.4(d)]. Research about the specific property, and about lumbering activities in the area during the first half of the nineteenth century proved to be fruitless. There is no definitive work that describes what an antebellum steam sawmill in south Louisiana looked like or how it operated. Thus, even the attempted application of analogs to the elucidation of this feature failed to produce positive results. In the absence of a demonstrable association with events that have contributed to broad patterns of history [36 CFR 60.4 (a)], and without further potential to contribute to understanding of history [36 CFR 60.4(d)], it is concluded 16IV154 does not possess the quality of significance necessary to make it eligible for the National Register criteria. No further work is recommended.

Finally, the cement and concrete foundations first reported by the National Park Service (Shafer et al. 1984), Site 16IV142, lack associated remains and clearly are not significant cultural resources (see Chapter VI). As a result of these investigations, it appears that the planned construction of three Iberville Parish levee enlargement and revetment projects will have no effect on significant cultural resources. No further work is recommended.

REFERENCES CITED

Bahr, Leonard M., Jr., Robert Costanza, John W. Day, Jr., Suzanne E. Bayley, Christopher Neill, Scott G. Leibowitz, and Jean Fruci

- 1983 *Ecological Characterization of the Mississippi Deltaic Plain Region: A Narrative with Management Recommendations*. Prepared for National Coastal Ecosystems Team Division of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C.

Begnaud, Allen

- 1980 The Louisiana Sugar Cane Industry: An Overview. In *Green Fields: Two Hundred Years of Louisiana Sugar*, pp 29-50. Prepared under the Auspices of the Center for Louisiana Studies, University of Southwestern Louisiana. University of Southwestern Louisiana, Lafayette.

Blake, Sylvia D.

- 1971 *Flow Blue*. Wallace-Homestead Book Company, Des Moines, Iowa.

Bouchereau, Louis and Alcée Bouchereau

- 1868- *Statement of the Sugar and Rice Crops Made in Louisiana*. Pelican Steam Book and Job Printing.
1917 New Orleans.

Bryant, Douglas D.

- 1985 *A Cultural Resource Survey of the Proposed Shell Pipeline Between Station 9030+7 and Station 9863+45, Iberville and Ascension Parishes, Louisiana*. Submitted by Coastal Environments, Inc., to Shell Pipeline Corporation, Baton Rouge. Report on file. Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

Bryant, V. M., C. Assad, S. Jameson, T. Jones, R. Murray, B. Thompson, and D. Carlson.

- 1982 *Archeological and Historical Studies in the White Castle Gap Revetment, Iberville Parish Louisiana*. Submitted to the U.S. Army Corps of Engineers, New Orleans District.

Champomier, P. A.

- 1844- *Statement of the Sugar Crop Made in Louisiana*. Cook, Young and Company, New Orleans.
1862

Chandler, R. E. (translator and editor)

- 1973 End of an Odyssey: Acadians Arrive in St. Gabriel, Louisiana. *Louisiana History* 14(1):287-296.

Coleman, J. M. and D. B. Prior

- 1983 *Deltaic Environments of Deposition*. Coastal Studies Institute Technical Report No. 174, Louisiana State University, Baton Rouge.

Darby, William

- 1816 *A Geographical Description of the State of Louisiana, the Southern Part of the State of Mississippi, and the Territory of Alabama*. James Olmstead, New York.

- Fredlund, Glen
1982 *Where Did the Bayougoula Dance, Why Do They Sing No More: A Reexamination of the Archeology of the Bayou Goula Area, Iberville Parish, Louisiana*. Unpublished Master's Thesis, Louisiana State University, Baton Rouge.
- Ford, James A. and George I. Quimby
1945 *The Tchefuncte Culture, An Early Occupation of the Lower Mississippi Valley*. *Society for American Archaeology Memoir 2*.
- Fortier, Alcée
1914 *Louisiana*. Century Historical Association, New Orleans.
- Genheimer, Robert
1987 *The Archeological Investigation of the Covington Nineteenth Century Riverfront Redevelopment Project*. Prepared for the City of Covington, Covington, Kentucky.
- Giardino, Marco J.
1984 Documentary evidence from the location of historic Indian villages in the Mississippi Delta. In *Perspectives in Gulf Coast Prehistory*, edited by Dave D. Davis, pp. 232-257. University of Florida Press, Gainesville.
- Ginn, M. K.
1940 A History of Rice Production in Louisiana. *Louisiana Historical Quarterly* 23(2):544-88.
- Godden, Geoffrey A.
1965 *An Illustrated Encyclopedia of British Pottery and Porcelain*. Bonanza Books, New York.
- Goodwin, R. Christopher, Paul C. Armstrong, Eva Jeanne Harris, James M. Wojtala
1988 *Archeological Testing at Two Sites Near White Castle, Iberville Parish, Louisiana: 16IV147 and 16IV149*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Goodwin, R. Christopher, Peter Gendel, and Jill-Karen Yakubik
1983 *Archeological Survey of the New House Site, Harlem Plantation, Plaquemines Parish, Louisiana*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Goodwin, R. Christopher, Peter A. Gendel, Jill-Karen Yakubik, Herschel A. Franks, and Carol J. Poplin
1987 *Cultural Resources Survey of the White Castle Revetment Item, Iberville Parish, Louisiana*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Goodwin, R. Christopher, Paul V. Heinrich, William P. Athens, and Stephen Hinks
1991 *Overview, Inventory, and Assessment of Cultural Resources in the Louisiana Coastal Zone*. Submitted by R. Christopher Goodwin and Associates, Inc., to the Coastal Management Division, Louisiana Department of Natural Resources, Baton Rouge.
- Goodwin, R. Christopher and Jill-Karen Yakubik
1982 *Report on the Level II Archeological Survey of Magnolia Plantation, Plaquemines Parish, Louisiana*. R. Christopher Goodwin and Associates, Inc., New Orleans, Louisiana. Submitted by R. Christopher Goodwin & Associates, Inc., to the Louisiana Division of Archeology, Department of Culture, Recreation, and Tourism, Baton Rouge.

- Goodwin, R. Christopher, Jill-Karen Yakubik, and Peter Gendel
 1984 *Archeological Data Recovery at Algiers Point*. Volumes I and II. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Goodwin, R. Christopher, Jill-Karen Yakubik, and Cyd Heymann Goodwin
 1983 *The Historic Archeology of Elmwood Plantation*. Submitted by R. Christopher Goodwin & Associates, Inc., to the Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.
- Goodwin, R. Christopher, Jill-Karen Yakubik, Debra Stayner, and Kenneth Jones
 1985 *Cultural Resources Survey of Five Mississippi River Revetment Items*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Goodwin, R. Christopher, James M. Wojtala, Lawrence L. Hewitt, and George W. Shannon, Jr.
 1988 *Rice Agriculture in the River Parishes: The Historical Archeology of the Vacherie Site (16 SJ 40), St. James Parish, Louisiana*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District.
- Grace, Albert L.
 1946 *The Heart of the Sugar Bowl*. Plaquemine, Louisiana.
- Haag, William G.
 1971 *Louisiana in North American Prehistory. Melanges 1:1-45*. Museum of Geoscience, Louisiana State University, Baton Rouge.
- Harris, Eva Jeanne, James M. Wojtala, John A. Turner, and R. Christopher Goodwin
 1988 *Archeological Monitoring of the Jackson Avenue to Thalia Street (Phase I) Floodwall Project in the City of New Orleans, Orleans Parish, Louisiana*. Submitted by R. Christopher Goodwin & Associates, Inc., to the U.S. Army Corps of Engineers, New Orleans District. New Orleans.
- Hudson, Jack C. and Kay Goelzer Hudson
 1972 *Analysis of a Cache of Gunflints From a Site in New Orleans: Gallier House. The Conference on Historic Site Archaeology Papers 7*, edited by Stanley South. The Institute of Archeology and Anthropology, University of South Carolina.
- Iberville Parish Development Board
 1964 *Iberville Parish Resources and Facilities*. Department of Public Works, Baton Rouge.
- Iberville Parish Planning Board
 1945 *Iberville Parish Resources and Facilities*. Department of Public Works, Baton Rouge.
- Inglis, C. C.
 1947 *Meanders and Their Bearing on River Training*. Institute of Civil Engineers.
- Jones, Olive and Catherine Sullivan
 1985 *The Parks Canada Glass Glossary*. Studies in Archaeology, Architecture and History, National Historic Parks and Sites Branch, Parks Canada, Ottawa.
- Kane, Harnett T.
 1939 *Lepers Were Smuggled To Carville Aboard Barges As 'Ostriches' in the Olden Days. The New Orleans Item*, Tuesday, May 2.

Ketchum, William C., Jr.

1971 *The Pottery and Porcelain Collector's Handbook*. Funk & Wagnalls, New York.

1983 *Pottery and Porcelain*. Alfred A. Knopf, New York.

Kinnaird, Lawrence

1945 *Spain in the Mississippi Valley, 1765-94*. Annual Report of the American Historical Association for the Year 1945, Vol. II. U.S. Government Printing Office, Washington D.C.

Kolb, Charles R. and Jack R. Van Lopik

1958 *Mississippi River Deltaic Plain, Southeastern Louisiana*. U.S. Army Corps of Engineers, Waterways Experiment Station, Technical Report 3-483-3-484.

Landry, Stuart Omer, Jr. (translator)

1966 *Voyage to Louisiana, 1803-1805, by C. C. Robin*. Pelican Publishing Company, New Orleans.

Louisiana State University College of Commerce

1949 *An Economic Survey of Iberville Parish*. Prepared for the Texas and Pacific Railway Company, by the Louisiana State University College of Commerce, Division of Research, Baton Rouge.

Lowery, George H., Jr.

1974 *The Mammals of Louisiana and the Adjacent Waters*. Louisiana State University Press, Baton Rouge.

Lowrie, Walter, and Walter S. Franklin (editors)

1834 *American State Papers, Class VIII, Public Lands*. Gales and Seaton, Washington, D.C.

Martin, Francois-Xavier

1827- *The History of Louisiana from the Earliest Period*. 2 Vols. New Orleans.

1829

McIntire, William G.

1958 *Prehistoric Indian Settlements of the Changing Mississippi River Delta*. Coastal Studies Series No. 1. Louisiana State University Press, Baton Rouge.

1980 *Level I Cultural Resource Survey for Planning Area Number 5, Iberville Parish, Louisiana*. Report on file, Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

1981 *Cultural Resource Survey, Louisiana Section of Proposed Pipeline Corridor from Weeks Island to Mississippi Border*. Submitted by the author to Dames & Moore, Houston, Texas. Report on file, Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

McWilliams, R. G. (translator and editor)

1981 *Iberville's Gulf Journals*. University of Alabama Press, Baton Rouge.

Menn, Joseph Karl

1964 *The Large Slaveholders of Louisiana - 1860*. Pelican Publishing Company, New Orleans.

- Miller, George L.
1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:1-40. Society for Historical Archaeology.
- Moore, N. Hudson
1944 *The Old China Book*. Tudor Publishing Company, New York.
- Muller, Jon L.
1983 The Southeast. In *Ancient North Americans*, edited by Jesse D. Jennings, pp. 373-419. W. H. Freeman and Company, New York.
- Munsey, Cecil
1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, Inc., New York
- Neitzel, Robert S., and J. Stephen Perry
1977 *A Prehistory of Central North Louisiana*. Submitted by Southern Archaeological Research, Inc., to the Research Institute, Northeast Louisiana University, Monroe.
- Nelson, Lee H.
1968 Nail Chronology as an Aid to Dating Old Buildings. *History News*, Volume 24, No. 11.
- Neuman, Robert
1984 *An Introduction to Louisiana Prehistory*. Louisiana State University Press, Baton Rouge.
- Noël Hume, Ivor
1970 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.
- Norman
1858 *Plantations on the Mississippi River from Natchez to New Orleans*. Reprint. Pelican Publishing Company, Inc., Gretna, Louisiana.
- Phillips, Philip
1970 *Archeological Survey of the Lower Yazoo Basin, Mississippi, 1949-1953*. Peabody Museum of Archeology and Ethnology, Harvard University Papers 60, Cambridge.
- Praetzellis, Mary
1980 Ceramics. In *Historical Archaeology at the Golden Eagle Site*, edited by Mary Praetzellis, Adrean Praetzellis, and Marley R. Brown III, pp. 7-1 through 7-84. Report submitted to the Redevelopment Agency of the City of Sacramento by the Cultural Resources Facility, Anthropological Studies Center, Sonoma State University, California.
- Pritchard, Walter (editor)
1938 A Tourist's Description of Louisiana in 1860. *Louisiana Historical Quarterly* 21(4).
- Quimby, George I.
1951 The Medora Site, West Baton Rouge Parish, Louisiana. *Anthropological Series* 24(2):81-135, Publication 664, Field Museum of Natural History, Chicago.

1957 The Bayou Goula Site, Iberville Parish, Louisiana. *Fieldiana: Anthropology*, 47(2):89-170.
- Ramsay, John
1947 *American Potters and Pottery*. Tudor Publishing Company, New York.

Riffel, Judy (editor)

1981 *Iberville Parish Records, Vols. I & II*. Baton Rouge.

1985 *Iberville Parish History*. Le Comité des Archives de la Louisiane, Baton Rouge.

South Louisiana Salute

1949 Salute to Iberville Parish. *South Louisiana Salute*. May.

Saucier, Roger T.

1974 *Quaternary Geology of the Lower Mississippi Valley*. Arkansas Archeology Survey, Research Series No. 6, Fayetteville, Arkansas.

Shafer, Judy, A. Berle Clemensen, and Diane Rhodes

1984 *An Archeological Survey of the Proposed St. Gabriel Levee Project (M-206.5 to 198.5-L), Iberville Parish, Louisiana*. Submitted by the National Park Service, Denver Service Center, Southeast-Southwest Team, to the U.S. Army Corps of Engineers, New Orleans District.

Shelford, Victor E.

1963 *The Ecology of North America*. University of Illinois Press, Urbana.

Sitterson, J. Carlyle

1953 *Sugar Country: The Cane Sugar Industry in the South, 1753-1950*. University of Kentucky Press, Lexington.

Smith, Lawson M., Joseph B. Dunbar, and Louis D. Britsch

1986 *Geomorphological Investigation of the Atchafalaya Basin, Area West, Atchafalaya Delta, and Terrebonne Marsh*. Geotechnical Laboratory and Coastal Engineering Research Center, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi, Technical Report GL-86-3. Submitted to U.S. Army Corps of Engineers, New Orleans District.

Smith, Steven D., Philip G. Rivet, Kathleen M. Byrd, and Nancy Hawkins

1983 *Louisiana's Comprehensive Archaeological Plan*. Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

South, Stanley

1977 *Methods and Theory in Historical Archeology*. Academic Press, New York.

Springer, J. W.

1974 The Bruly St. Martin Site and its implications for coastal settlement in Louisiana. *Louisiana Archaeology* 1(1):75-82.

Stuart, D. R. and Greene, J. A.

1983 *An Archeological Survey of the Proposed Plaquemine Bend Revetment, Iberville Parish, Louisiana*. Submitted by the National Park Service, Denver Service Center, to the U.S. Army Corps of Engineers, New Orleans District.

Sussman, Linda

1977 Changes in Pearlware Dinnerware, 1780-1830. *Historical Archaeology* 11:105-111. Society for Historical Archaeology.

Taylor, Joe Gray

1976 *Louisiana*. W. W. Norton and Company, Inc., New York.

Tobin, Edgar

- 1953 *Aerial Survey of Iberville Parish, Louisiana*. Map on file, Iberville Parish Tax Assessor, Plaquemine, Louisiana.

U.S. Department of Agriculture (USDA)

- 1977 *Soil Survey of Iberville Parish, Louisiana*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

Voorhies, J. K.

- 1973 *Some Late Eighteenth Century Louisianians: Census Records 1758-1796*. University of Southwestern Louisiana, Lafayette.

The Weekly Iberville South

- 1906 *The Weekly Iberville South*. Vol. XXX, p. 5, Plaquemine, Louisiana.

Weinstein, Richard A.

- 1986 Tchefuncte Occupation in the Lower Mississippi Delta and Adjacent Coastal Zone. In *The Tchula Period in the Mid-South and Lower Mississippi Valley, Proceedings of the 1982 Mid-South Archaeological Conference*, edited by David H. Dye and Ronald C. Brister. Archaeological Report No. 17, Mississippi Department of Archives and History, Jackson.

Weinstein, Richard A., and Philip G. Rivet

- 1978 *Beau Mire: A Late Tchula Period Site of the Tchefuncte Culture, Ascension Parish, Louisiana*. Anthropological Report No. 1, Baton Rouge.

Wetherbee, Jean

- 1985 *A Second Look at White Ironstone*. Wallace-Homestead Book Company, Lombard, Illinois.

White, Alice Pemble

- 1944 The Plantation Experience of Joseph and Lavinia Erwin, 1807-1836. *Louisiana Historical Quarterly* 27:343-478.

Woodiel, Deborah K.

- 1980a *Excavations at the St. Gabriel Site, Iberville Parish, Louisiana*. Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.
- 1980b *St. Gabriel: Prehistoric Life on the Mississippi*. Unpublished Master's thesis, Department of Geography and Anthropology, Louisiana State University, Baton Rouge.

Worthy, Linda H.

- 1982 Classification and Interpretation of Late Nineteenth Century and Early Twentieth Century Ceramics. In *Archaeology of Urban America: The Search for Pattern and Process*, edited by Roy S. Dickens, Jr. Academic Press, New York.

Yakubik, Jill-Karen, Marco J. Giardino, and Dave D. Davis

- 1981 *Level I Cultural Resources Survey and Assessment for the Proposed Manchac Oil Refinery, Iberville Parish, Louisiana*. Submitted by the Department of Anthropology, Tulane University, to Petroscope, Inc. Report on file, Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism, Baton Rouge.

ARCHIVAL SOURCES

Iberville Parish Courthouse, Plaquemine, Louisiana.

Conveyance records. On file, Clerk of Court.

1988 Map of Iberville Parish. On file, Tax Assessor.

Department of Archives and Manuscripts, Hill Memorial Library, Louisiana State University, Baton Rouge.

1883 Map of Iberville Parish, Louisiana.

U.S. Census, 1840, Iberville Parish. On microfilm, Louisiana Division, New Orleans Public Library.

PERSONAL COMMUNICATION

Kenneth A. Ashworth, Staff Archeologist, Environmental Branch, Planning Division, U.S. Army Corps of Engineers, New Orleans District, New Orleans, Louisiana, 1993.

George L. Miller, Colonial Williamsburg Foundation, Williamsburg, Virginia, 1985.

APPENDIX I

**LAND CLAIMS MADE TO THE
UNITED STATES GOVERNMENT
FOR PROPERTIES IN THE
ST. GABRIEL PROJECT AREA
(From the American State Papers)**

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UNITED STATES GOVERNMENT
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(From the American State Papers)**

No. 205 - Laurent Dupres claims a tract of land, situate in the county of Iberville, on the left bank of the Mississippi, containing fourteen arpents in front, by forty in depth, with an opening of four degrees towards the rear, bounded on the upper side by lands of Mopes Lacroix and Flechier, and on the lower by lands of Baptiste Dupres.

It appears that ten arpents of said land were regularly granted by the Spanish Government, on the 11th day of February, 1799, to Bartholomew Duverges; and it further appears, from the testimony of Amant Hebert, that the remaining four arpents were purchased from Diego Nemandez, who purchased them from Narcisse O'Donate Hebert, to whom they formerly belonged. Confirmed.

No. 31 - Pierre Babin and Henry Bonamy claim a tract of land situate in the parish of Iberville, and on the east bank of the river Mississippi, containing five arpents front by the usual depth of forty arpents, and bounded above by the land of Bernard Comau and below by the land of Elie LeBlanc.

The said tract of land originally formed part of a larger tract of ten arpents front formerly owned by one Pablo Chlasson, who obtained a regular order of survey for the same from Governor Estevan Miro, on the 1st day of September, 1786. It is now claimed in virtue of the said order, and of constant and uninterrupted habitation and cultivation ever since. We are therefore of the opinion that this claim ought to be confirmed.

No. 31 - Stephen Hebert claims a tract of land, situated in the county of Iberville, and on the left bank of the Mississippi, containing seven arpents and thirteen toises of front, by forty arpents in depth, bounded on the lower sides by land of Alexander Hebert, and on the other sides by vacant land.

It appearing to the Board, from a patent exhibited, that said land was granted by the Spanish Government to the present claimant, on the 5th day of November, 1774, they do confirm his said claim.

No. 329 - Pierre Rivet claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents one toise and five feet front, and forty arpents in depth, and bounded on one side by land of Joseph Leblanc, and on the other side by land of Simon Landry.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 310 - Simon Landry claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing four arpents and twenty-seven toises front, and forty arpents in depth, and bounded on one side by land of Pierre Rivet, and on the other by land of Paul Hebert.

It appears that the land now claimed was inhabited and cultivated on the 20th December, 1803, and that the same was continually inhabited and cultivated by those under whom the claimant holds for more than ten consecutive years next preceding. Confirmed.

No. 307 - Michel Garrell claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing two arpents front, and forty in depth, and bounded on one side by land of Paul Hebert, and on the other by land of Narcisse Hebert.

It appears that the land now claimed was inhabited and cultivated on the 20th December, 1803, and that the same was continually inhabited and cultivated by those under whom the claimant holds for more than ten consecutive years next preceding. Confirmed.

No 330 - Narcisse Hebert claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing four arpents and twenty-seven toises front, and forty arpents in depth, and bounded on one side by land of Michel Garrell, and on the other by land of Alexandre Hebert.

It appears that the land now claimed was inhabited and cultivated on the 20th December, 1803, and that the same was continually inhabited and cultivated by those whom the claimant holds for more than ten consecutive years next preceding. Confirmed.

No. 30 - Joseph Leblanc claims a tract of land, situated in the county of Iberville, and on the left bank of the Mississippi, containing four arpents in front, by forty in depth, bounded on the upper side by land of Francis Hebert, and on the lower by land of John B. Babin.

It appearing to the Board, from a patent exhibited, that said land was granted by the Spanish Government to the present claimant, on the 5th day of November, 1774, they are therefor of the opinion that his claim ought, and the same is hereby confirmed.

No. ___ - John Baptiste Babin claims a tract of land, situate in the county of Iberville, and on the left bank of the Mississippi, containing five arpents and twenty-five toises in front, by forty in depth, bounded on the upper side by land of Joseph Leblanc, and on the lower by land of John Baptiste Hebert.

It appearing to the Board, from a patent or complete title exhibited, that said land was granted by the Spanish Government to the claimant on the 5th day of November, 1774, the Board do hereby confirm him in his claim aforesaid.

No. 95 - Paul Babin claims a tract of land, situate on the river Mississippi, in the county of Iberville and district of Baton Rouge, containing four arpents and twenty-three toises front, and forty arpents in depth, and bounded on one side by land of Jean B. Babin, and on the other by land of Simon Allain.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 92 - Simon Allain claims a tract of land, situate on the river Mississippi, in the county of Iberville and district of Baton Rouge, containing seven arpents twenty-five toises and four feet front, and forty arpents in depth, and bounded on one side by land of Bonaventura Leblanc, and on the other by Juan Hebert.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 29 - Bonaventura Leblanc claims a tract of land, situated in the county of Iberville, and on the left bank of the Mississippi, containing nine arpents and twelve toises in front, by forty arpents in depth, bounded on the upper side by land of Peter Allain, and on the lower by land of Joseph Richard.

It appearing to the Board, from a patent exhibited, that said land was granted by the Spanish Government to the present claimant, on the 5th day of November, 1774, they are therefor of the opinion that his claim ought, and the same is hereby confirmed.

No. 74 - Joseph Babin claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville and district of Manchak, containing four and a half arpents front, and forty deep, and bounded on one side by land of Dienne Mecoleur, and on the other by land of Senateur Babin.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 13 - Joseph Dupuy claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville and district of Manchak, containing seven and a half arpents front, and forty in depth, and bounded on the upper side by land of Armand Richard, and on the lower by land belonging to the church of St. Gabriel.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 331 - William Wikoff, in behalf of the parishioners of the parish church of Manchak, claims a tract of land belonging to the said church, and situate on the river Mississippi, in the county of Iberville, containing one hundred and one and seventy-three hundredths superficial arpents, and bounded on one side by land of Oliver Blanchard, and on the other by land of Joseph Dupuy.

This claim is founded upon a complete grant made in the year 1774, in favor of the parish church of Manchak, of ten arpents twenty toises and four feet front, on the depth of forty arpents. Confirmed.

No. 288 - Olivier Blanchard claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing three arpents ten toises and four feet in front, and eighty arpents in depth, and bounded on one side by land of Jean Longue-Epee.

The first depth of forty arpents of this land was granted, in the year 1774, to Bernard Capdevielle; and Michel Gareuil having afterwards become the owner of it, by purchase, obtained a grant to a second depth of forty arpents in 1793; under which titles the present claimant holds by virtue of regular sales. Confirmed.

No. 61 - Joseph Leblanc claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing five arpents and seventeen toises in front, and forty arpents in depth, and bounded on the upper side by land of Bernard Capdevielle, and on the lower by land of Bonaventura Forest.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of the claimant, who obtained a complete grant for the same in the year 1774, from Governor Unzaga. Confirmed.

No. 296 - Etienne Coumo claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing seven arpents seven toises and three feet in front, and forty arpents in depth, and bounded on the upper side by land of Joseph Leblanc, and on the lower by land of Pedro Forest.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of Bonaventura Forest, who obtained a complete grant for the same in the year 1774, from Governor Unzaga; under which grant the claimant holds by virtue of regular sales. Confirmed.

No. 42 - Rene Arnous and Constant Viel claim a tract of land situate in the parish of Iberville, and on the east bank of the river Mississippi, containing four arpents and ten toises front by the ordinary depth of forty arpents, and bounded above by land of Thomasin Blanchard and below by land of Victor Blanchard.

The said tract of land forms part of a tract of six arpents nine toises and five feet front, regularly granted by the Spanish government to Anselmo Blanchard on the 5th day of November, 1774; under which said grantee claimant holds in virtue of a series of regular conveyances. We are therefore of opinion that this claim ought to be confirmed.

No. 43 - Thomasin Blanchard claims a tract of land situate in the parish of Iberville, and on the east bank of the river Mississippi, containing two arpents front by the ordinary depth of forty arpents, and bounded above by land originally granted to Paul Chlasson, and below by land of Messrs. Arnous and Viel.

The said tract of land forms part of a tract of six arpents nine toises and five feet front, regularly granted by the Spanish government to Anselmo Blanchard on the 5th day of November, 1774; under which said grantee claimant holds in virtue of regular successive sales. We are therefore of opinion that this claim ought to be confirmed.

No. 42 - Victor Blanchard claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents and four feet in front, and forty arpents in depth, and bounded on the upper side by land of Anselme Blanchard, and on the lower by land of Firmin Landry.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of Joseph Blanchard, who obtained a complete grant for the same in the year 1774, from Governor Unzaga; under which grant the present claimant holds, by regular deeds of sale. Confirmed.

No. 307 - Hypolite Landry claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents and five toises in front, and forty arpents in depth, and bounded on the upper side by land of Victor Blanchard, and on the lower by land of Guillaume Germain.

This is part of a tract of land of eight arpents and five toises in front, on the ordinary depth, surveyed in the year 1772 in favor of Firmin Landry, who obtained a complete grant for the same in 1775 from Governor Unzaga; under which grant the claimant holds by virtue of successive sales. Confirmed.

No. 245 - Marguerite Brasseux, widow of Paul Babin, claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents five toises three feet and six inches in front, and forty arpents in depth, and bounded on the upper side by land of Guillaume Germain, and on the lower by land of Joseph Brasset.

This land was surveyed by Don Luis Andry, in the year 1774, in favor of Francisco Landry, who obtained a complete grant of the same, in 1775, from Governor Unzaga. The claimant holds under said grant by virtue of regular sales. Confirmed.

No. 30 - John Estevan claims a tract of land situate in the parish of Iberville, and on the east bank of the river Mississippi, containing six arpents five toises three feet and six inches front by the ordinary depth of forty arpents, and bounded above by land of Francois Siguineau and below by land of Francois Cassagnol.

The said tract of land was granted in due form, by the Spanish government, to Pedro LeBlanc, on the 5th day of November, 1775; it is now claimed in virtue of said grant, and of regular successive conveyances under the grantee. We are therefore of the opinion that this claim ought to be confirmed.

No. 20 - Arthemise Cassagnol and Marie Cassagnol, (free persons of color), claim a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent front by the ordinary depth of forty arpents, and bounded above by land of Jean Estevan and below by land of Victor Chevalier.

The said tract of land forms part of the tract originally granted by the Spanish government to Anselmo Belile, and mentioned in our report on the claim of Louis Menier, No. 15, to which we refer. We are therefore of the opinion that this claim ought to be confirmed.

No. 19 - Victor Chevalier claims a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent two toises three feet six inches front, by the ordinary depth of forty arpents, and bounded above by land of Arthemise and Marie Cassagnol, free persons of color, and below by land of Adrien Deve.

The said tract of land forms part of the tract originally granted to Anselmo Belile, and mentioned in our report on the claim of Louis Menier, No. 15, to which we refer. We are, therefore, of opinion that this claim ought to be confirmed.

No. 18 - Adrien Deve claims a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent two toises three feet six inches front, by the ordinary depth of forty arpents, and bounded above by land of Victor Chevalier and below by land of L. Menier.

The said tract of land forms part of the tract originally granted by the Spanish government to Anselmo Belile, and mentioned in our report on the claim of Louis Menier, No. 15, to which we refer. We are therefore of opinion that this claim ought to be confirmed.

No. 15 - Louis Menier claims a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent front by the ordinary depth of forty arpents, and bounded on the upper side by land of Adrien Deve and on the lower by land of Mad. Pierre Lope.

The said tract of land forms part of a larger tract of six arpents five toises and one foot front, originally granted by the Spanish government to Anselmo Belile, on the 5th day of March, 1772. We are therefore of the opinion that this claim ought to be confirmed.

No. 17 - The Widow of Pierre Lope claims a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent front by the ordinary depth of forty arpents, and bounded above by land of Louis Menier and below by land of Mrs. Thomas Estevan.

The said tract of land constitutes part of the tract originally granted by the Spanish government to Anselmo Belile, and mentioned in our report on the claim of Louis Menier, No. 15, to which we refer. We are therefore of opinion that this claim ought to be confirmed.

No. 16 - Jean Estevan claims a tract of land situate in the parish of Iberville, on the east bank of the river Mississippi, containing one arpent front by the ordinary depth of forty arpents, and bounded above by land of Mrs. Pierre Lope and below by land of Mad. Thomas Estevan.

The said tract of land constitutes part of the tract originally granted to Anselmo Belile, and mentioned in the foregoing report on the claim of Louis Menier, No. 15, to which we refer. We are therefore of opinion that this claim ought to be confirmed.

No. 149 - Thomas Estevan claims a tract of land, situate in the county of Iberville, and on the left bank of the Mississippi, containing four arpents in front, by forty in depth, bounded on the upper side by land of John B. Dupuis, and on the lower by land of Francois Ribas.

It appearing to the Board, from a patent exhibited, that part of said land, viz: two arpents in front, by the depth aforesaid, was, with a greater quantity, granted by the Spanish Government to Paul Landry, on the 5th day of February, 1775; and it appearing to the Board, from a warrant of survey, likewise exhibited, dated 1st day of September, 1786, that the two remaining arpents of front, by the depth aforesaid, were, with a larger quantity, conceded by the Spanish Government to one Paul Chlasson; and it appearing to the satisfaction of the Board, in regard to this latter quantity, that all the provisions of the first section of the act of Congress establishing this Board have been fulfilled; and it moreover appearing, from instruments of conveyance exhibited, that the land thus claimed by the present claimant has been transferred to him, the Board do hereby confirm him in his claim aforesaid.

No. 21 - Francois Rivas claims a tract of land, situate in the county of Iberville, and on the left bank of the Mississippi, containing twelve arpents five toises and one foot in front, by forty arpents in depth, bounded on the upper side by land of Thomas Estevan, and on the lower by land of Thimoleon Lesassier.

It appearing to the Board, from a patent exhibited, that eight arpents four toises of front, by forty arpents in depth, of said land, was granted to Anselme Landry on the 5th day of February, 1775; and it appearing to the Board, from a certain decree in writing signed Louis Dotisne, commandant and judge of the district of Iberville, dated the 10th day of July, 1780, that four arpents one toise and one foot front, by the depth aforesaid, (remainder) of said land, having belonged to Jacob Landry, who had neglected to keep the levee in order, although twice required by him, the said commandant, &c. so to do; and that in consequence of the necessary repairs having been made by Nicholas Triste, said land aforesaid was by the commandant aforesaid adjudged to him; and it also appearing to the Board, from divers instruments of conveyance, also exhibited, that the whole of the said land has become the property of the present claimant, the Board is of opinion that his claim ought, and the same is hereby confirmed.

No. 22 - Thimoleon Lesassier claims a tract of land, situated in the county of Iberville, and on the left bank of the Mississippi, containing six arpents two toises and a half of front, by forty arpents in depth, bounded on the upper side by land of Francois Rivas, and on the lower by land of Simon P. Babin.

It appearing to the Board, from a patent exhibited, that said land was granted by the Spanish Government to Joseph Landry on the 5th day of February, 1775, and from divers instruments of conveyance, also exhibited, that it has become the property of the present claimant, the Board is of opinion that his claim ought, and the same hereby is confirmed.

No. 85 - Simon Pierre Babin claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing five arpents twenty-six toises and one foot in front, and forty arpents in depth, and bounded on the upper side by land of Thimoleon Lesassier, and on the lower by land of Baptiste Leblanc.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated for more than ten consecutive years next preceding. Confirmed.

No. 55 - Jean Baptiste Leblanc claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing five arpents five toises and three feet in front, and forty arpents in depth, and bounded on the upper side by land of Simon Babin, and on the lower by land of Joseph Leblanc.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of Mathurin Richard, who obtained a complete grant for the same, in 1775, from Governor Unzaga; under which grant the claimant holds, by virtue of successive sales. Confirmed.

No. 54 - Joseph and Jean Alexis Leblanc claim a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing ten arpents in front, and forty in depth, and bounded on the upper side by land of Mathurin Richard, and on the lower by land of Joseph Como, Jun.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of Pedro Brasseux, who obtained a complete grant for the same in the year 1775, from Governor Unzaga; under which grant the claimant holds, by virtue of regular deeds of sale. Confirmed.

No. 295 - Edmond Capdevielle claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents and twenty toises in front, and forty arpents in depth, and bounded on the upper side by land of Alexis Leblanc, and on the lower by land of Jean Baptiste Allain.

This is part of a tract of land of seven arpents and twenty toises in front, on the ordinary depth, surveyed by Don Luis Andry, in the year 1772, in favor of Joseph Comon, who obtained a complete grant for the same in 1775 from Governor Unzaga; under which grant the claimant holds by virtue of regular sales. Confirmed.

No. 419 - Jean Baptiste Allain claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing four arpents and fourteen toises in front, and forty arpents in depth, and bounded on the upper side by land of Edmond Capdevielle, and on the lower by land of Simon Leblanc.

It appears that the claimant did actually inhabit and cultivate the land now claimed on the 20th December, 1803, and that the same was continually inhabited and cultivated by him, or those under whom he claims, for more than ten consecutive years next preceding. Confirmed.

No. 305 - Simon Leblanc claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing five arpents in front, and forty in depth, and bounded on the upper side by land of Jean Baptiste Allain, and on the lower by land of Marchel Dupuis.

This is part of a tract of land of eight arpents in front, on the ordinary depth, surveyed in the year 1772 in favor of Carlos Coumo, who obtained a complete grant for the same in 1775 from Governor Unzaga; under which grant the claimant holds by virtue of successive sales. Confirmed.

No. 306 - Marcel Dupuis claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents in front, and forty in depth, and bounded on the upper side by land of Simon Leblanc, and on the lower by land of Nathan Michel.

This is part of the tract of land mentioned in the last, No. 305, granted to Carlos Coumo; under which grant the present claimant holds by virtue of successive sales. Confirmed.

No. 370 - Nathan Mitchell claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing forty-four and twenty-hundredths superficial arpents, and bounded on the upper side by land of Mercel Dupuis, and on the lower by land of S. Leblanc.

It appears to the satisfaction of the Board that this land was inhabited and cultivated on and before the 1st day of October, 1800, and that the same continued to be inhabited and cultivated until on and after the 20th December, 1803. Confirmed.

No. 46 - Thomas Durnford, as acting executor of John Harrison, deceased, claims a tract of land, situated in the county of Iberville, and on the left bank of the Mississippi, containing twenty arpents and seventeen toises of front, and converging towards the rear twenty-five degrees; bounded on the upper side by vacant lands, and on the lower by land of one Michel.

It appearing to the Board, from a letter exhibited, signed by Francis Rivas, and dated 30th of October, 1802, and addressed to Thomas Durnford, aforesaid, executor as aforesaid, that he, the said Durnford, was called upon, in virtue of his said executorship, to make or repair the levee and road upon the said tract of land, from which it is made to appear that the said John Harrison, deceased, was recognised by the authority aforesaid as having been, in his lifetime, the proprietor of said land; it further appearing to the Board, from a memorial dated the 23d day of November, 1802, and addressed by the said Thomas Durnford, in his capacity as executor aforesaid, to the Intendant General of the Province of Louisiana, that it was therein stated that the land aforesaid had been conceded by the Baron de Carondelet, whilst Governor of Louisiana, (which must have been prior to 1798,) to John Harrison, deceased; which fact appears to have been recognised by the patent which was upon said memorial, ordered by the Intendant General aforesaid to be issued; which order is dated on the 15th day of November, 1802, and is exhibited to the Board; and it further appearing to the Board, from the certificate of Charles Laveau Trudeau, Esq. late Surveyor General under the Spanish Government, dated the 27th of March, 1803, that a survey of said land was duly made in favor of the estate of the deceased John Harrison; under all these circumstances, the Board are opinion that the claim of Thomas Durnford aforesaid, as executor of John Harrison, deceased, aforesaid, ought, and the same hereby is confirmed.

No. 191 - Walter Burk claims a tract of land, situate in the county of Iberville, on the left bank of the Mississippi, containing eighteen arpents and eighteen toises in front, by thirty-one arpents and twenty toises in depth, the upper side line, and that of the lower, adjoining Simon Broussard's, are thirty arpents in depth.

It appears that said land was inhabited and cultivated by the claimant, or by those under whom he claims, on the 20th December, 1803, and for more than ten consecutive years prior to that period. Confirmed.

No. 294 - Simon Broussard claims a tract of land, situate on the east side of the river Mississippi, in the county of Iberville, containing six arpents seven toises and four feet in front, and forty arpents in depth, and bounded on the upper side by land of Andre Bourg, and on the lower by land of Jean Baptiste Allain.

This land was surveyed by Don Luis Andry, in the year 1772, in favor of Maturin Benoit, who obtained a complete grant for the same, in 1775, from Governor Unzaga; under which grant the claimant holds by virtue of regular sales. Confirmed.

APPENDIX II

SCOPE OF SERVICES

SCOPE OF SERVICES
CULTURAL RESOURCES SURVEY OF THREE
IBERVILLE PARISH LEVEE ENLARGEMENT AND REVETMENT CONSTRUCTION ITEMS

CONTRACT DACW29-86-D-0093

1. **Introduction.** This delivery order calls for a cultural resource investigation of three levee and revetment construction rights of way located between miles 204.0 and 191.0 along the left descending bank of the Mississippi River in Iberville Parish, Louisiana (Enclosure 1, Hydrographic Survey Charts 31, 32 and 34). Within the thirteen mile project area, survey will be required of approximately 4.6 miles of batture right of way. The items of work are St. Gabriel Levee Enlargement, St. Gabriel Revetment and New River Bend Revetment. The two St. Gabriel items overlap and should be treated as a single investigation unit. The New River Bend Revetment item is a short, separate survey unit located downstream from the St. Gabriel jobs. The Contractor will complete inventory survey of selected portions of these items; relocate, identify and test one site/spot find identified by previous survey; and assess the impact of the three proposed projects to cultural resources. Plan drawings for the three construction items are attached to this scope of service (Enclosures 2, 3 and 4). The contract period for this delivery order is 181 days.

2. **Description of the Study Area.** The project area is defined as the Mississippi River batture, extending from the riverside toe of the Mississippi River Levee to the low waterline of the riverbank between miles 204.0 and 191.0 (left descending bank only). The batture was extensively borrowed for levee construction in the 1920s and 1930s. A portion of the project right of way is revetted (approximately miles 203.0 to 198.6). In 1979, the Pontchartrain Levee Shaping and Slope Pavement Project cleared a corridor 65 feet riverward of the levee toe between miles 213.8 to 202.0. Drainage improvements required shallow ditching along the riverside levee toe. Miles 205.8 to 198.8 were surveyed by the National Park Service for the Corps of Engineers in 1984. One surface site, SG-1 (identified as a ferry landing) was found (Enclosure 5, site form). A draft report (Enclosure 6) was prepared but never completed. In 1984, the Corps of Engineers inspected a bank failure between miles 198.6 and 199.0, an area overlapping the downstream end of the National Park Service survey corridor. The buried remains of Virginia Plantation were located and tested under emergency conditions as the revetment was being built. The report, started in 1985, was not completed.

3. **Project Impact.** The St. Gabriel Levee Enlargement Item will bring the existing levee up to design grade for this reach of the river. The item includes segments of landside and riverside enlargement, slope paving

replacement, and riverside berm construction. Land disturbance will occur within the existing levee right-of-way and a 75 foot wide corridor adjacent to the riverside toe of the levee. The corridor will be cleared to construct drainage improvements (approximately 3 feet deep adjacent to the levee toe) and three short berms. The major impact to any subsurface cultural resources will come from excavation of three of the four proposed riverside borrow pits (maximum depth of 15 feet) at approximately miles 204.0, 202.2, 198.5, and 198.0-L. The borrow area at mile 204.0 is located on post-1921 point bar accretion.

St. Gabriel and New River Bend Revetments will impact the riverbank. These reaches will be stabilized with continuous, articulated concrete mattress which is mechanically laid from the low waterline to a point several hundred feet into the river channel. To prepare for revetting, a 200 to 300 foot wide corridor adjacent to the bankline will be cleared of all vegetation and graded to a standard slope. Slope grading will remove the upper bankline. Any cultural resource within 300 horizontal feet of the bankline and within 10 vertical feet of the ground surface has a high potential for being destroyed. Surficial resources further than 300 feet from the bankline may be subject to disturbance from the movement of heavy equipment, but buried sites will remain intact.

4. **General Nature of the Work to be Performed.** The Contractor is responsible for: a) surveying approximately 4.6 miles of Mississippi River batture (revetment easement and three batture borrow pits); b) recording and assessing the significance of all newly discovered sites; c) relocating, identifying and assessing the significance of one site identified by the National Park Service, Denver Service Center; d) incorporating all data from the unfinished National Park Service survey of the St. Gabriel Levee Enlargement Item into the report of investigation for this delivery order; e) incorporating all data from the unfinished Corps of Engineers survey and testing of the St. Gabriel Emergency Revetment Item into the report of investigation for this delivery order; f) predicting the locations of subsurface prehistoric and historic sites between miles 204.0 and 191.0-L; and g) preparing comprehensive draft and final reports of investigation for the study.

5. **Study Requirements.** The work to be performed by the Contractor will be divided into three phases: Literature Search and Records Review; Intensive Survey and Site Assessment; and Data Analysis and Report Preparation.

a. **Phase 1: Literature Search and Records Review.** The Contractor shall commence, upon work item award, with a literature, map, and records review specific to the project reach (M-204.0 to 191.0-L). This phase shall include but not be limited to review of historic maps, the State Archeologist's site and standing structure files, the National Register of Historic Places, geological and geomorphological data, archeological reports, ethnohistoric records, historic archives, and public records.

At a minimum, the literature and records review will familiarize the reader with the geomorphology (point bars, cutbanks, crevasses, relict channels,

etc.) of the study area; establish the distribution of prehistoric and historic sites in the region and their proximity to the study area; identify previously recorded sites, standing structures, National Register of Historic Places properties and National Landmarks in or in close proximity to the project area; provide national, regional and local context for assessing the historical, architectural and archeological contribution of all sites and structures located in the project area; and predict resources which can be expected to be located within the project area. Economic and social trends, channel migration, major natural events, and all previous construction affecting land use patterns and the state of preservation of predicted resources will be analyzed and presented. The literature search will place this contract effort within the context of similar work conducted previously along the Mississippi River.

Overviews of the region, parish and general project vicinity appear in reports of other cultural resource investigations in Iberville Parish. These will be summarized and referenced but not repeated. The focus of this literature search will be on man's use of this particular reach of the Mississippi River and its natural levee through time. Specific land use information is needed for the entire reach to facilitate prediction of site locations in these and future project easements.

b. Phase 2: Intensive Survey and Site Assessment. Fieldwork shall commence upon delivery order award. The survey corridor will extend from the riverside toe of the Mississippi River Levee to the river's edge, between miles 204.0 to 203.2-L; 202.5 to 202.2-L; 198.6 to 196.0-L; and 191.9 to 191.0-L.

The project is structured to build upon the surface survey completed by the National Park Service of the St. Gabriel Levee Enlargement Item while incorporating more rigorous survey methodology of new survey acreage and identified borrow pits. The Contractor will include sample augering in the investigation methodology for the borrow areas, in particular, since the previous survey was not structured to locate buried sites. Augering should take natural deposited and the projected 5 m depth of borrow pits into account. Historic and geomorphological data relevant to these segments are to be analyzed to determine whether buried resources were ever present and whether they would have been damaged by previous construction.

Because of the agency's need for rapid information return from very specific portions of the right of way, the Contractor will give priority in scheduling field work to the three St. Gabriel Levee Enlargement borrow pit locations at miles 202.2, 198.5 and 198.0-L. Auger data are needed immediately. Also of top priority for management decision making are site location data from New River Bend Revetment and a one mile section of the downstream segment of the St. Gabriel Revetment between miles 198.6 and 197.6-L. The Contractor will verbally report the results of the survey of each of these segments to the Technical Representative as they are finished, but no later than March 25, 1988.

An intensive survey is a comprehensive, systematic, and detailed physical examination of a project item for the purpose of locating and inventorying all cultural resources within the impact zone. The survey will be performed within the context of an explicit research design, formulated in recognition of all prior investigations in the study area and surrounding region, and will include subsurface testing and evaluation of identified resources against the National Register of Historic Places criteria of significance (36 CFR 60.4). The survey will provide adequate information to seek determinations of eligibility from the Keeper of the National Register, and will innumerate project effects on each resource located within the study area. The evaluation will be conducted utilizing current professional standards and guidelines including, but not limited to:

the National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation", dated June 1, 1982;

the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;

Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;

the Advisory Council on Historic Preservation's Section 106 Update/3 entitled, "Manual of Mitigation Measures (MOMM)", dated October 12, 1982.

The survey shall be an intensive pedestrian investigation augmented by systematic subsurface testing. Maximum transect width will not exceed 20 meters. The areas surveyed and all sites located within project boundaries will be recorded (in ink) to scale on the appropriate 7.5 minute quadrangle and aerial mosaic project maps. The quadrangle maps will be used to illustrate site forms (see below). The project maps will be returned to the COR with the draft report of investigation. All sites will be sufficiently tested using shovel, auger or other excavation techniques to determine and record site size, depth of deposit, stratigraphy, cultural association, function, approximate date of occupation, and condition. Site boundaries, test excavation units at sites (including test pits, shovel tests, auger intervals, backhoe trenches, etc.) and activity areas will be measured and mapped to scale. All scaled field maps will accurately reference grid locations in terms of levee stations or range markers in close proximity to the illustrated work area. The actual elevation (NGVD) of all sites, the top of bank, and top and bottom of cultural strata will be determined and mapped.

Site SG-1 will be relocated, identified and tested to determine its significance.

The Technical Representative will be informed ahead of time of the testing schedule of all sites.

The Contractor will fill out and file state site forms with the Office of the Louisiana State Archeologist and cite the resulting state-assigned site numbers in all draft and final reports of this investigation. The Contractor will submit updated state site forms to the State Archeologist for all previously discovered sites. These forms will correct previously filed information and summarize what is known of each resource as a result of this investigation. One unbound copy of each site or standing structure form will be submitted to the COR with the draft report.

All standing structures located in the survey area will be identified by function, dated and described using standard terminology of formal and/or vernacular architecture, as appropriate to each structure. Each standing structure will be recorded (using a simplified, standardized format selected by the Division of Archaeology and Historic Preservation), accompanied by a minimum of three, clear, black and white photographs showing front, back and side views of the structure. The Contractor will determine whether subsurface features are present. If present, the structure and all features shall be treated as a site, which shall be mapped and recorded on State of Louisiana site forms. The Contractor shall assess the significance of all standing structures using information collected during the survey and literature search phases of this work item.

If sites exist in the project right-of-way which require extensive testing to determine their condition, data producing potential or significance, the need for further work will be discussed with the Technical Representative prior to the completion of all field work.

c. Phase 3: Data Analyses and Report Preparation. All survey and testing data will be analyzed using currently acceptable scientific methods. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Office of the Louisiana State Archeologist. The catalog system will include site and provenience designations. Analyses of data from this effort will incorporate all data and artifacts collected by the National Park Service from the the St. Gabriel Levee Enlargement Item and by the Corps of Engineers from the St. Gabriel Emergency Revetment Item. The Contractor will fully present the field methods and results of the National Park Service survey. This report represents the final report of the National Park Service investigation. The Contractor will document but correct any misinterpretation in the National Park Service data. The Contractor will work with the Technical Representative to include the results of the Corps' testing. The testing effort will appear as a separate chapter in the report of investigation and will be drafted by the Technical Representative. The Contractor will prepare all figures and analyze all artifacts from these three studies to ensure consistency in style and content.

All literature, map search, field and laboratory data will be integrated to produce a single, graphically illustrated, scientifically acceptable draft report discussing the three project rights of way. The St. Gabriel Levee Enlargement and St. Gabriel Revetment jobs will be discussed as a single

unit. Project impacts on all cultural resources located and/or tested by this study will be assessed. The Contractor shall provide justification of the rationale used and a detailed explanation of why each resource does or does not meet the National Register significance criteria (36 CFR 60.4). For each resource recommended as eligible to the National Register and assessed to be impacted by construction, the Contractor shall recommend mitigation alternatives. Inferential statements and conclusions will be supported by field, map or archival data. It will not be sufficient to make significance recommendations based solely upon the basis of assumed site condition, artifact content, or artifact frequency. All significance assessments of sites and structures will be stated in terms of the context of the body Mississippi River floodplain/batture sites.

6. Reports.

a. Monthly Progress Reports. One copy of a brief and concise statement of progress shall be submitted with and for the same period as the monthly billing voucher throughout the duration of the delivery order. These reports, which may be in letter form, should summarize all work performed, information gained, or problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included each month. The monthly report should also note difficulties, if any, in meeting the contract schedule.

b. Draft and Final Reports (Phases 1, 2, and 3). Five copies of a draft report integrating all phases of this investigation will be submitted to the COR for review and comment 98 days after the date of the order.

An estimate of the acreage surveyed for this project will be given in the report introduction.

The draft and final reports shall include all data and documentation required by 36 CFR 60-63 to prepare requests for Determination of Eligibility to the National Register of Historic Places for those sites recommended by the Contractor as significant. The Contractor shall recommend appropriate mitigation procedures for each significant cultural resource which are appropriate to the site, its physical setting and condition.

These written reports shall follow the format set forth in MIL-STD-847A with the following exceptions: 1) separate, soft, durable, wrap-around covers will be used instead of self covers; 2) page size shall be 8-1/2 x 11 inches with a 1-1/2-inch binding margin and 1-inch margins on all other edges; 3) the text reference and Reference Cited formats of the Society for American Archaeology will be used. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual, dated January 1973.

The body of each report shall include the following: 1) introduction to the study and study area; 2) environmental setting; 3) review and evaluation of previous archeological investigations; 4) distribution of

prehistoric and historic settlement in the study area; 5) research design; 6) description of field and laboratory methodology, statement of project objectives, and analysis of effectiveness of methods; 7) data analyses and cultural material inventories; 8) results of the NPS survey; 9) results of Corps testing; 10) data interpretation; 11) data integration; 12) conclusion; 13) recommendation; 14) references cited; and 15) appendices, as appropriate.

The COR will provide all review comments to the Contractor within 45 days after receipt of the draft reports (143 days after the date of the order). Upon receipt of the review comments, the Contractor shall incorporate or resolve all comments with the approval of the COR and submit one reproducible master copy and 40 bound copies of each report of investigation, and all separate appendices to the COR within 174 days after the date of the order.

In order to preclude vandalism, the draft and final reports shall not contain specific locations of archeological sites.

7. Disposal of Records and Artifacts. All records, photographs, artifacts, and other material data recovered under the terms of this delivery order shall be recorded and catalogued in a manner compatible with those systems utilized by the Louisiana SHPO and by State and Federal agencies which store archeological data. They shall be held and maintained by the Contractor until completion of the delivery order. Final disposition of the artifacts and records will be in accord with applicable Federal and State laws. Unless otherwise specified, artifacts will be returned to the landowner or permanently housed with the Louisiana Division of Archaeology and Historic Preservation or in a repository selected by the State Archeologist. The Principal Investigator shall inform the COR in writing when the transfer of data has been completed and shall forward to the COR a catalog of items entered into curation. The location of any notes, photographs or artifacts which are separated from the main collections will also be documented. Presently existing private archeological collections from the project area which are used in data analyses will remain in private ownership. The Contractor shall be responsible for delivery of the analyzed archeological materials to the individual landowners, the Louisiana SHPO's office, or any other repository designated by the Government following acceptance of the final report. All artifacts to be permanently curated will be cleaned, stabilized, labeled, catalogued on typed State curation forms, and placed in sturdy bags and boxes which are labeled with site, excavation unit or survey collection unit provenience. In accordance with these same standards, the Contractor will prepare for permanent curation 8 boxes of artifactual material originating from several Corps of Engineers sponsored investigations. All artifacts have been washed, analyzed and reported. They have been stored for several years in uncontrolled conditions during which time the packing materials have begun to disintegrate. These collections can no longer be safeguarded from loss. The Contractor shall catalog, bag, box and deliver these materials to permanent curation in the same manner and at the same time as the collections from this study.

NOTE: Enclosures were previously furnished.